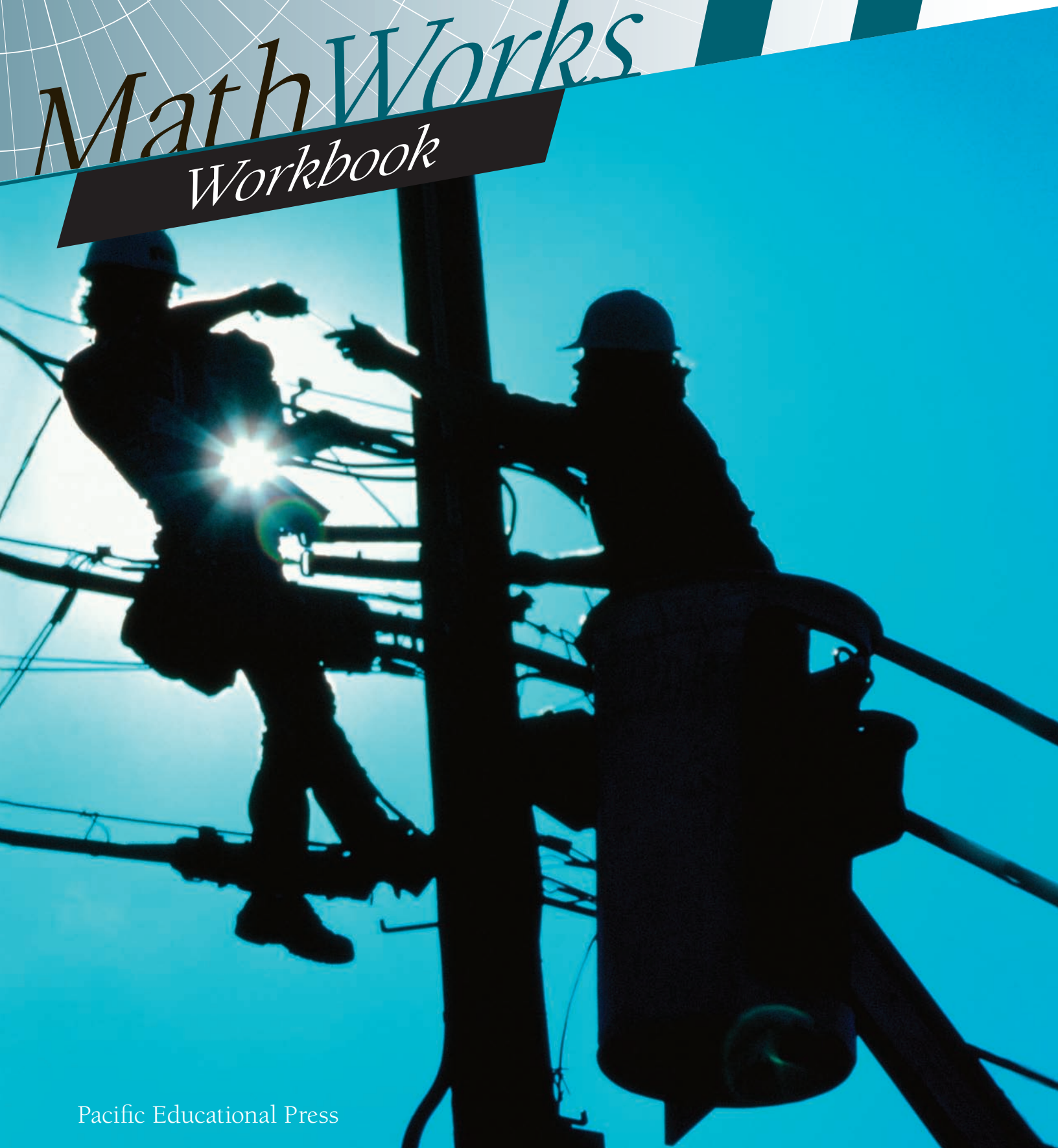
Answer Key

MathWorks 11

Workbook



Pacific Educational Press

MathWorks 11
Workbook

ANSWER KEY

Pacific Educational Press
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Answer Key

CHAPTER 1
SLOPE AND RATE OF CHANGE
1.1 RISE OVER RUN

BUILD YOUR SKILLS, P. 11

1. 1:3
2. $\frac{23}{17}$
3. a) 6:1 b) 8:3
   c) 8:13
4. 5.3 L
5. 18 cm
6. 9 cups
7. a) $\frac{1}{6}$ b) $\frac{1}{4}$
   c) $\frac{4}{9}$ d) $\frac{5}{4}$
   e) $\frac{24}{35}$
8. 25 333 m
9. 221 cm
10. 15.1 m
11. $\frac{7}{12}$
12. 228 cm
13. 2.55 m

PRACTISE YOUR NEW SKILLS P. 17

1.

Rise	*Run*	*Slope*	
		As a fraction $\left(m=\frac{\text{rise}}{\text{run}}\right)$	*As a decimal*
18 m	63 m	$m = \frac{2}{7}$	0.29
21 m	49 m	$m = \frac{3}{7}$	0.43
1.2 cm	0.6 cm	$m = 2$	2
12.4 mm	4.6 mm	$m = \frac{62}{23}$	2.70
300 ft	900 ft	$m = \frac{1}{3}$	0.33

2.

Rise	*Run*	*Slope*
15 ft	60 ft	$\frac{1}{4}$
12 cm	32 cm	0.375
28.8 m	16 m	$\frac{9}{5}$
192 in	42 in	$\frac{32}{7}$
63 m	21 m	3.0
19.5 ft	78 ft	0.25

3. 0.47
4. 5.5 ft
5. 50 cm
6. 20.5 m
7. $\frac{143}{1200}$ or 0.12

8. $\frac{2}{5}$ or 0.4

9. 0.36 m

1.2 GRADE, ANGLE OF ELEVATION, AND DISTANCE

BUILD YOUR SKILLS, P. 22

1. a) G ≈ 23.8°, h ≈ 4.7 cm
   b) S ≈ 46.4°, r ≈ 11.3 m
   c) E ≈ 55.3°, f ≈ 11.4 in
2. a) θ ≈ 24°; $m = \frac{11}{25}$ or 0.44
   b) θ ≈ 64°; $m = \frac{29}{14}$ or 2.07
3. a) 7.6 ft b) 23.2°
4. a) 6.2 m b) 20.8°
5. a) 28.8 m b) 28.9 m
6. 18%
7. a) $-\frac{1}{48}$ or −0.02 b) 2.1%
8. a) $\frac{27}{200}$ or 0.135 b) 7.7°
   c) 2.03 m
9. 1.9 m
10. 4:3
11. 1.4 ft

PRACTISE YOUR NEW SKILLS, P. 32

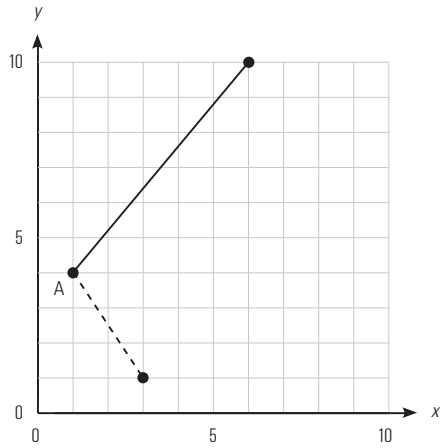
1. a) A ≈ 50.4°; B ≈ 39.6°; $m = \frac{29}{35}$ or 0.83
   b) A ≈ 33.7°; B ≈ 56.3°; $m = \frac{3}{2}$ or 1.5
   c) A ≈ 53.8°; B ≈ 36.2°; $m = \frac{19}{26}$ or 0.73
   d) A ≈ 54.0°; B ≈ 36.0°; $m = \frac{8}{11}$ or 0.73
2. a) 7.3 m b) 9.5°
3. a) For 35°, m ≈ 0.7; for 45°, m = 1.0
   b) 70% and 100%
4. a) $m = \frac{3}{500}$ or 0.006
   b) 7.2 cm
   c) 0.34°
5. a) 2987 m b) 9.2%
6. a) 2:5 b) 0.4
   c) 40%
7. The roof of the second house is steeper.
8. 4.8%

1.3 RATE OF CHANGE

BUILD YOUR SKILLS, P. 39

1. slope $\ell_1 = \frac{3}{5}$; slope $\ell_2 = \frac{3}{2}$; line ℓ_2 is steeper.
2. slope ℓ_1 = 0; slope ℓ_2 is undefined.

3.



4. a) 6 km/h

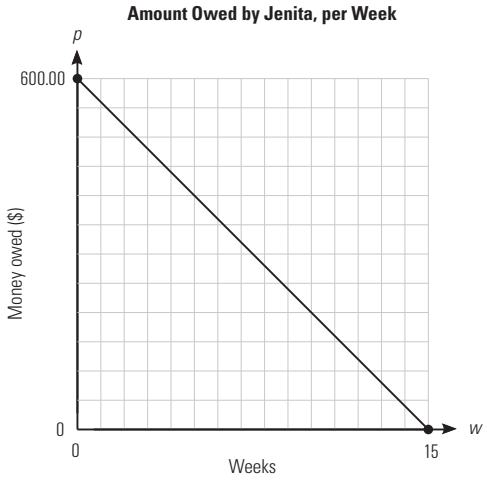
   b) Time

c) 6 h

5. a) Let p be the amount owed and w be the number of weeks.

   $p = 600 - 40w$

b)



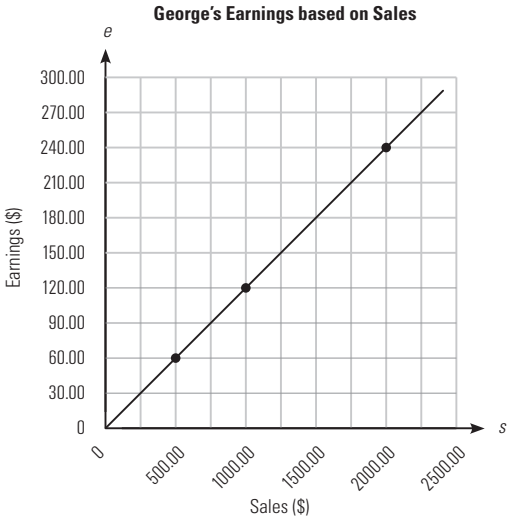
The slope of the line is −40. The slope represents the amount of money Jenita pays per week.

6. a) \$60.00, \$120.00, \$240.00

   b) earnings = 0.12 × sales

   The independent variable is the sales.

c)



$m = 0.12$ or $\frac{3}{25}$

   d) \$1750.00

7. a) 50 gal/min or 3000 gal/h

   b) 270 min or 4.5 h

8. a) 76 km/h b) 96 km/h

9. a) 535 minute or 8 hours 55 minutes

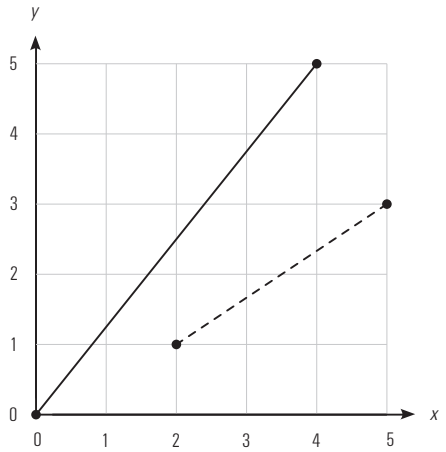
   b) 72 pages

PRACTISE YOUR NEW SKILLS, P. 50

1. a) 51 b) $\frac{3}{8}$ or 0.375

   c) $-\frac{3}{125}$ or -0.024

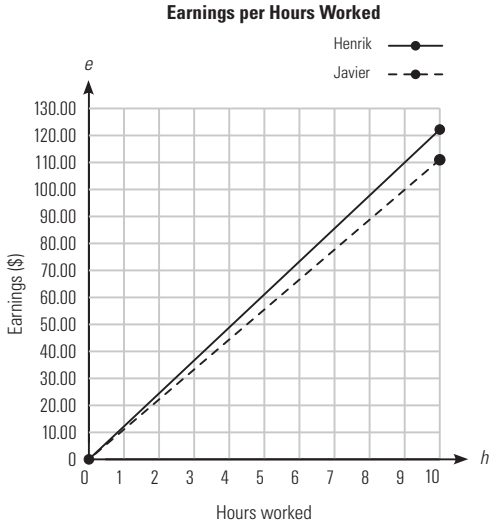
2.



3. a)

Hours	*Henrik's earnings*	*Javier's earnings*
1	$12.20	$11.10
2	$24.40	$22.20
3	$36.60	$33.30
4	$48.80	$44.40
5	$61.00	$55.50

b)



c) Henrik

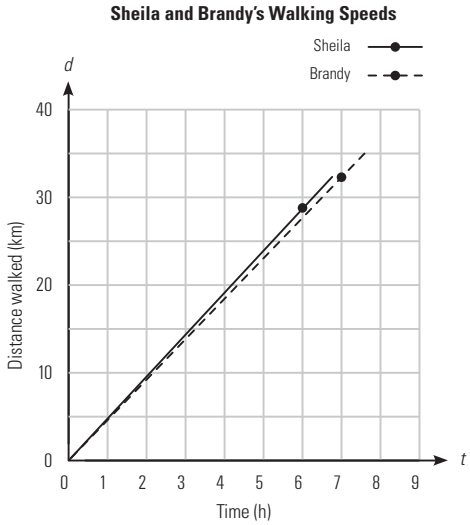
d) Henrik's rate of earning = $12.20/h;
Javier's rate of earning = $11.10/h.

4. $189 000.00

5. a) 20 km/h b) 115 km

6. a) Sheila is the faster walker.

b)

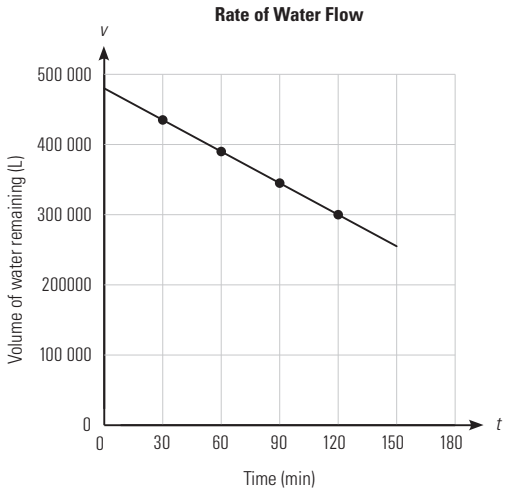


c) Sheila: 2.1 h; Brandy: 2.2 h.

7. a)

Time elapsed (minutes)	*Volume of water remaining (L)*
0	480 000
30	435 000
60	390 000
90	345 000
120	300 000
150	255 000

b)



c) The slope is the rate of the water flow.

d) 320 min

CHAPTER TEST, P. 55

1. $\frac{2}{5}$ or 0.4

2. 167 cm

3. 0.95 m

4. a) 10 ft b) 10.7 ft

c) 20.6°

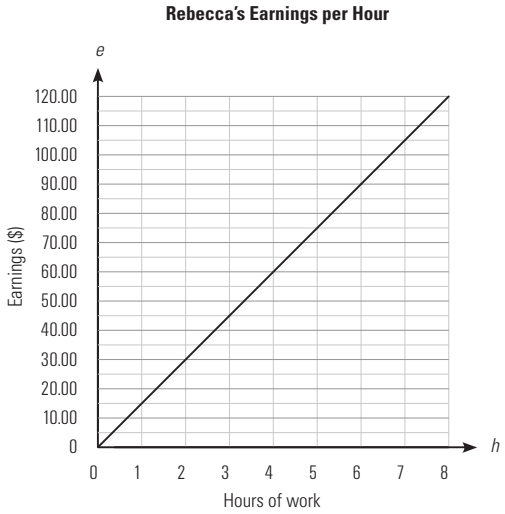
5. a) $\frac{1}{3}$ or 0.33 b) 18.4°

6. 0.9 km or 900 m

7. a) 126.1 m b) 5.4%

8. 1.4 m

9. a)



b) $m = 15$

The slope represents her earnings per hour.

c) $120.00

CHAPTER 2
GRAPHICAL REPRESENTATIONS
2.1 BROKEN LINE GRAPHS

BUILD YOUR SKILLS, P. 60

1. a) Wednesday: $3.00; Friday: $0.

b) He spent about $19.00 for lunch on Sunday. He may have gone out to a restaurant with friends.

2. a) Katie's heart rate in beats per minute, each hour from 8:00 am to 9:00 pm.

b) At 8:00 am, 2:00 pm, 5:00 pm, and 9:00 pm, it was 68 beats per minute.

c) Katie's heart rate was highest at 1:00 pm. She may have just been involved in some physical activity.

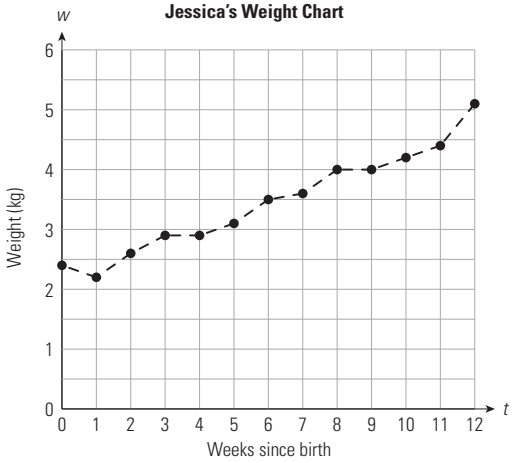
3. a) $1.75

b) The stock was worth most ($12.15) in Week 4. He would have earned $10.40 per share of the stock.

4.

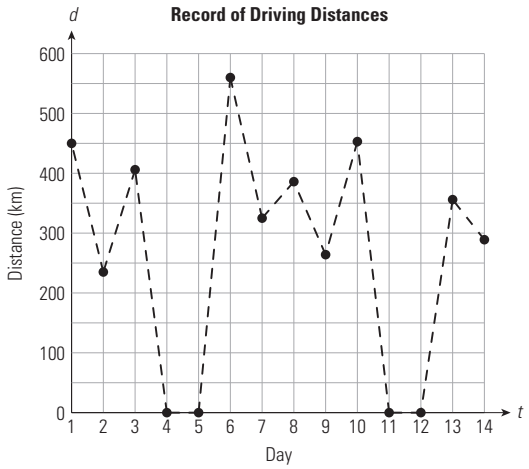
Sales of the magazine seem to be slowly increasing.

5.



Jessica lost weight during the first week, and her weight stayed the same between the 8th and 9th weeks. Otherwise, she gained weight each week.

6. a)



b) The days when he drove 0 km are unusual. These are probably his days off.

c) The graph is a fairly good representation of the data) You can see his maximum and minimum daily driving distances, and you can get a general idea of the range in which his driving distances usually fall.

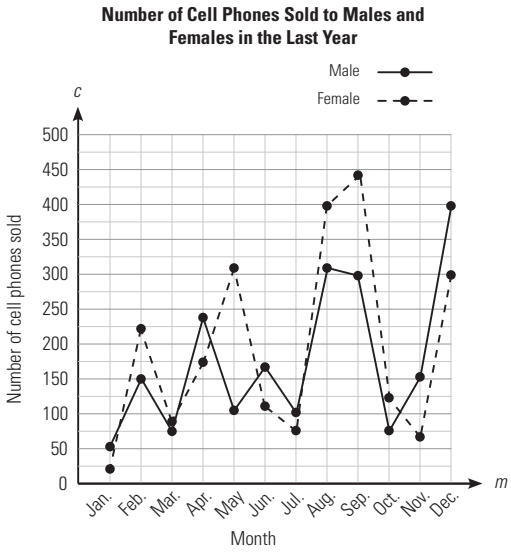
7. Thérèse was driving her car from 8:00 am until 10:00 am. It was parked from 10:00 am to 12:00 pm, at which time she put gas in the tank. Thérèse then drove for an hour (until 1:00 pm) and stopped again for an hour until 2:00 pm. Between 2:00 and 4:00 pm, she drove again, and she stopped for the last hour.

8. a) The cost seems to be decreasing slightly.

b) approximately $325.00

c) between $300.00 and $310.00

9.

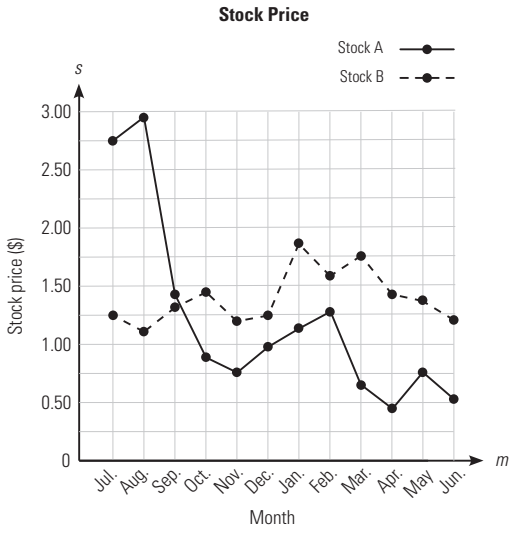


b) The number of cell phones bought fluctuated greatly from month to month, but overall, there seems to be an increase in purchases over time.

c) No, there is no real relationship between the number of cell phones purchased and gender. In some months females bought more, and in other months males did.

d) It is not very useful. A bar graph or a stacked bar graph would show the data better.

10. a)



b) Stock A started off high and made a sudden drop in August and September. It increased again over the next few months and then dropped in March.

Stock B prices fluctuated slightly over the year but remained relatively even compared to Stock A.

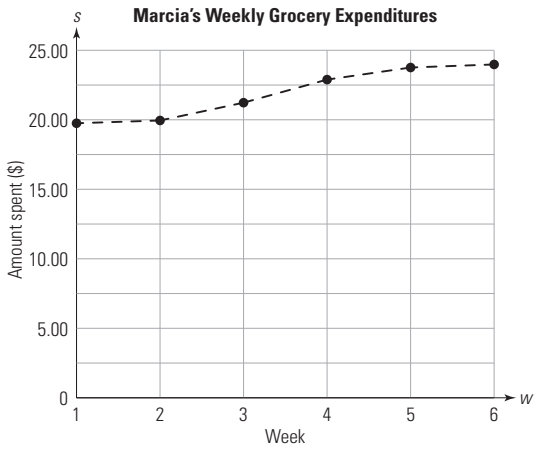
c) Answers will vary.

11. a) The graph represents the amount of money Marcia spent per week on groceries.

b) Her spending on groceries increased over the 6 weeks.

c) The vertical axis starts at $19.50 rather than $0.

d)



12. a) The first graph makes the decrease look more rapid because one unit on the horizontal axis represents twice as many years.

b) The second graph is better because more years are represented.

c) about 61%

d) about 1952

e) about 17%

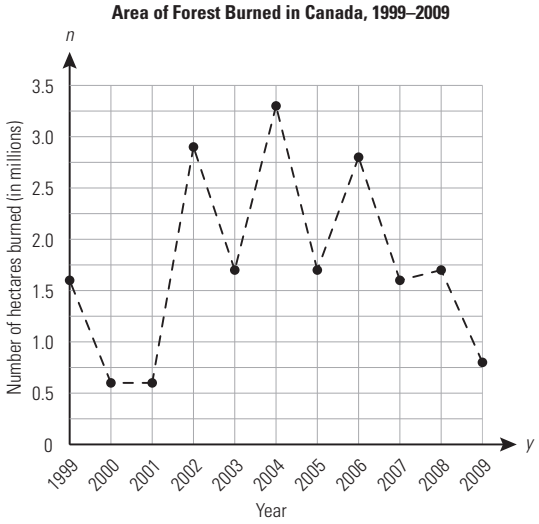
PRACTISE YOUR NEW SKILLS, P. 76

1. a) Week 1: 56 000 steps; Week 13: 81 000.

b) She had fewest steps during weeks 5 and 9, each with about 54 000 steps.

c) With the exception of the two low weeks (weeks 5 and 9), the number of steps generally increased per week.

2.



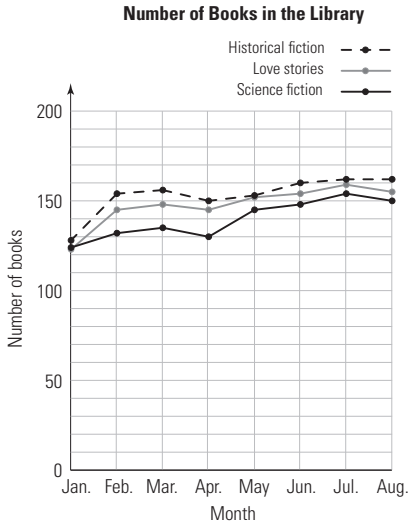
There is no general trend of increase or decrease in the data. However, if one year was high, the following few years tend to be lower. There were a lot of hectares of forest burned fires from 2002 to 2006.

3. At the beginning of the year there was a steady rise in prices, but from June to August they dropped. Prices remained about the same from August to September, then rose again until the end of the year. The highest prices were in December.

4. a) Brand A has no general trend. Brand B has had a steady market with few fluctuations. Brand C has had some of the highest sales at the beginning, but then sales dropped fairly consistently.

b) Answers will vary.

5. a)

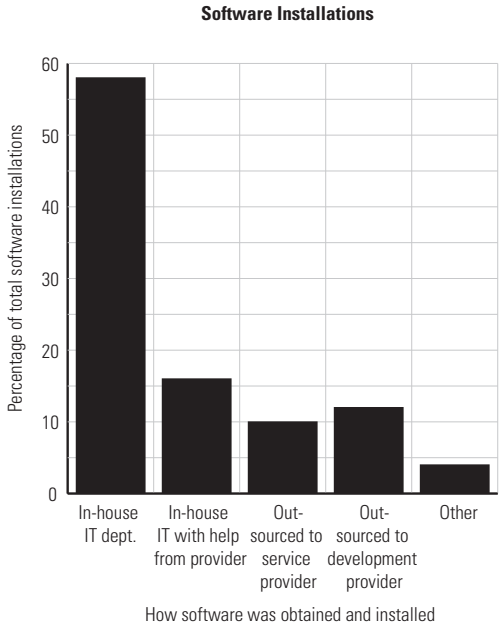


b) There is a general, slow trend of increase in number of titles available, indicating that there are more books being added. A decline would likely mean that the librarian got rid of some titles.

2.2 BAR GRAPHS

BUILD YOUR SKILLS, P. 82

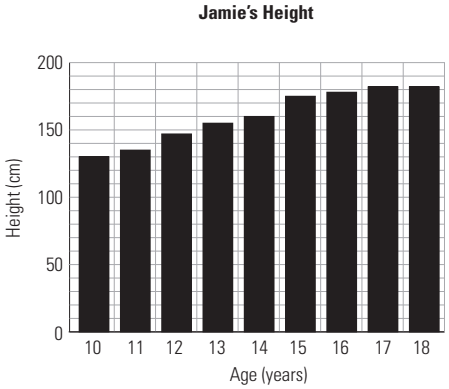
1.



2. a) Answers will vary, but could include:

- Show height on the vertical axis.
- Show age on the horizontal axis, and display it from lowest to highest.

b)



3. Answers will vary, but could include:

- The bars are of different widths, representing different periods of time.
- The bars are three dimensional, making it harder to tell their heights.

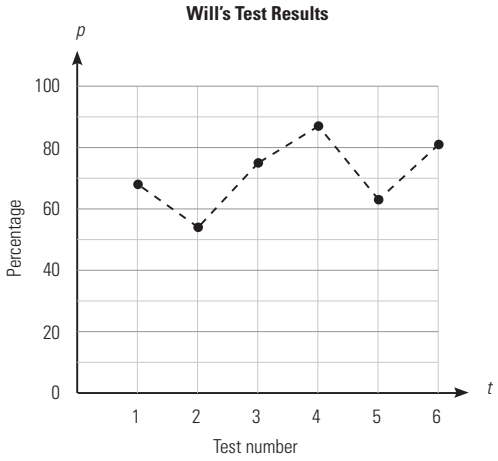
4. a) Answers will vary.

b) approximately 22.5 billion tonnes

c) approximately 27 billion tonnes

d) Answers will vary.

5.

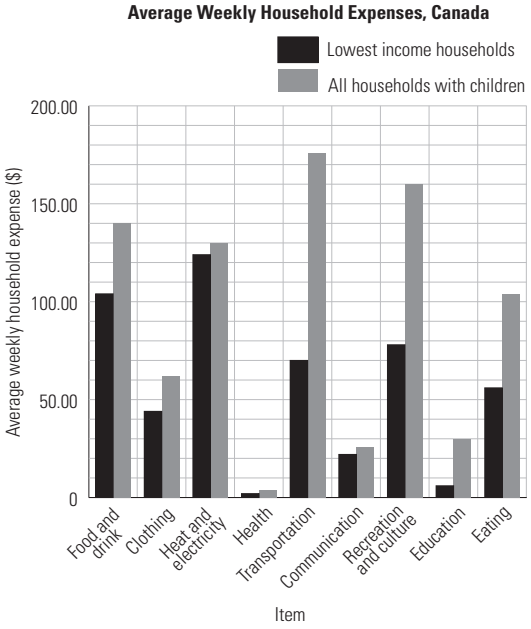


Answers will vary.

6. a) The number of tickets sold per day tends to decrease over time.

   b) The bar graph is the better representation because it more clearly indicates the number of tickets sold. The line graph is not a good representation, because it makes the data look continuous.

7. a)



   b) Answers will vary.

8. a) Most: June, 675

   Fewest: January, 225

   b) July, 225

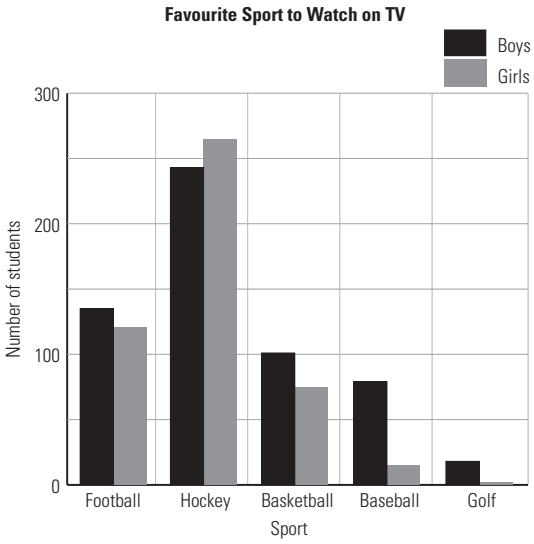
9. a) They represent negative numbers. The temperature was below zero.

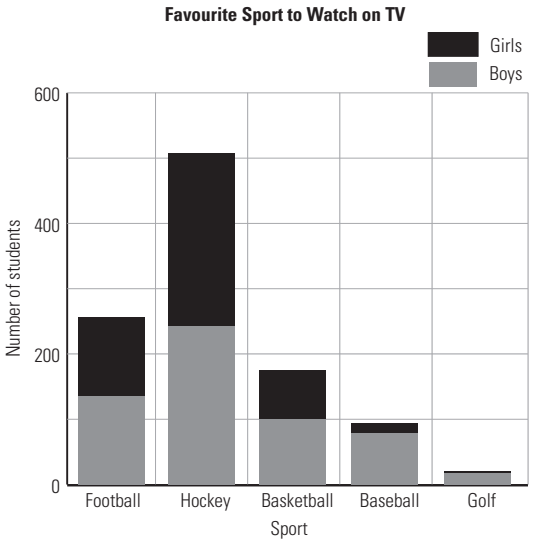
   b) There is no black bar on Saturday because the high temperature of the day was 0°C.

   c) There was no change in temperature. It stayed at –6°C.

   d) The temperature increased over the week.

10. a)





   b) 1054

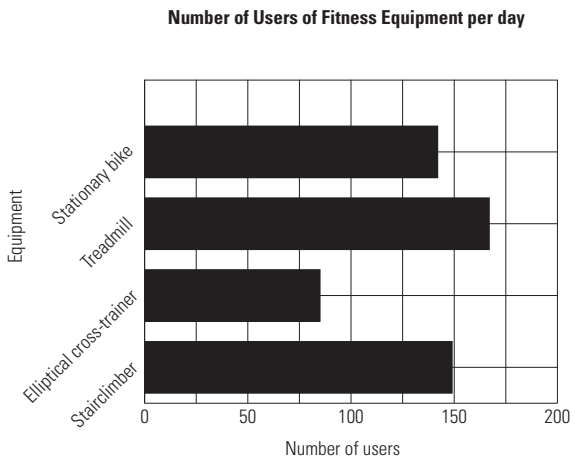
   c) hockey

   d) Answers will vary.

11. Answers will vary.

PRACTISE YOUR NEW SKILLS, P. 96

1.



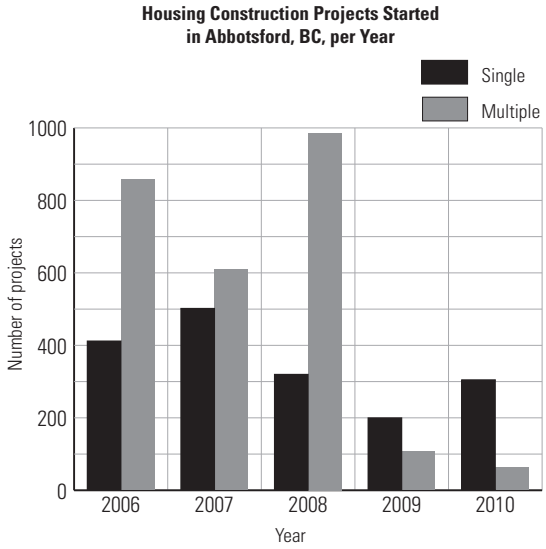
2. a) Movies 4 and 5

   b) Movie 8

3. The number of girls taking home economics classes has stayed fairly constant over the time period, while the number of boys taking the classes has increased.

4. a) The numbers of single-detached house and multiple-unit construction projects started has generally decreased since 2006. There was a large drop in multiple-unit construction projects between 2008 and 2009.

   b)



   Answers will vary.

2.3 HISTOGRAMS

BUILD YOUR SKILLS, P. 101

1. a) 125

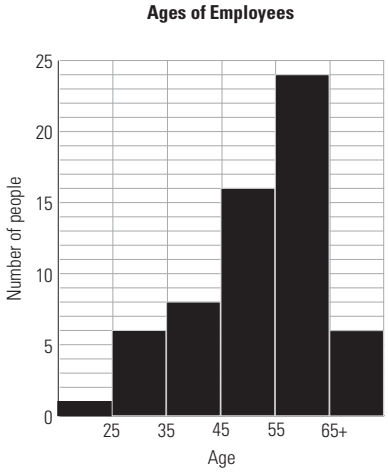
   b) between $1000.00 and $2000.00

   c) The exact value cannot be determined from the graph, but it is over $5000.00.

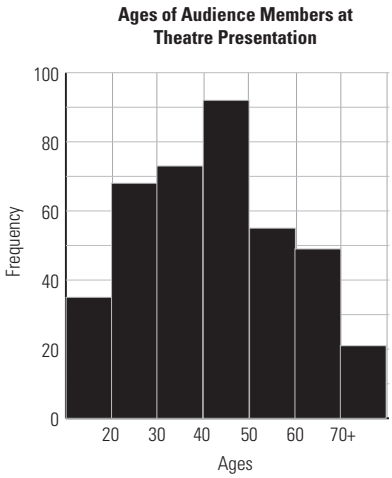
2. a) 3800 b) 6700

   c) 2600 d) 22 700

3.



4. a)



   b) 103

   c) The exact age cannot be determined from the graph, but he or she was under the age of 20.

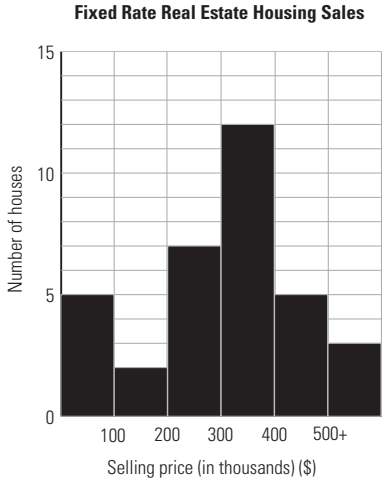
PRACTISE YOUR NEW SKILLS, P. 105

1. a) 8 b) 9

   c) The exact mark cannot be determined from the graph, but it was over 90% and less than or equal to 100%.

2. a) 2 b) 20

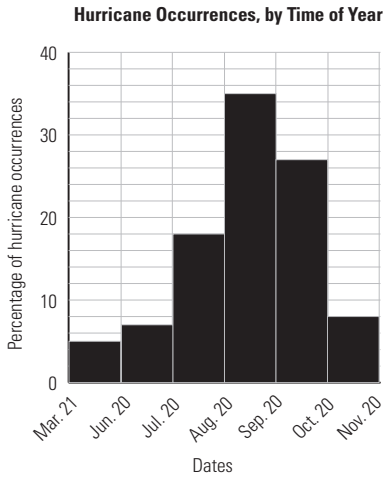
3. a)



   b) The exact price cannot be determined from the graph, but it was below $100 000.00.

   c) 9

4. a)



   b) between November 20 and March 20

   c) from August 21 until September 20

2.4 CIRCLE GRAPHS

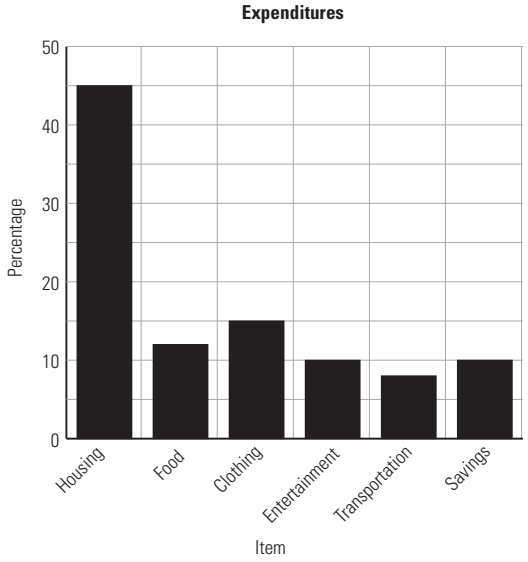
BUILD YOUR SKILLS P. 111

1. a) 24 b) blue, 43

2. a) entertainment and savings

   b) $2500.00 per month

   c)

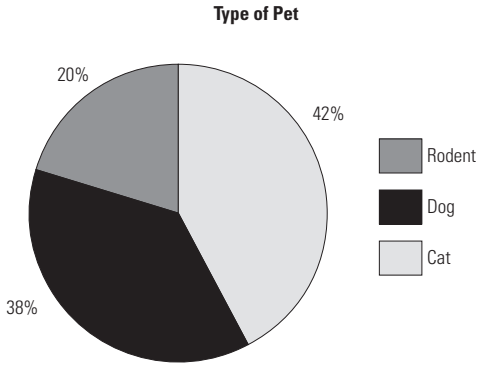


   The circle graph is a better representation of the data.

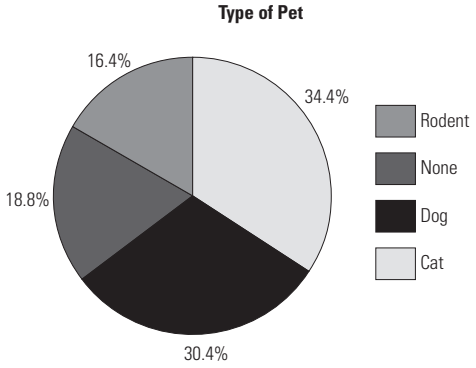
3. a) 34% b) 23%

   c) The toilet and the clothes washer combined to about half the water use, at 48%.

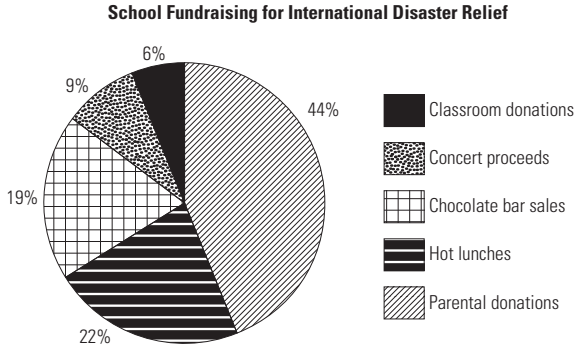
4. a)



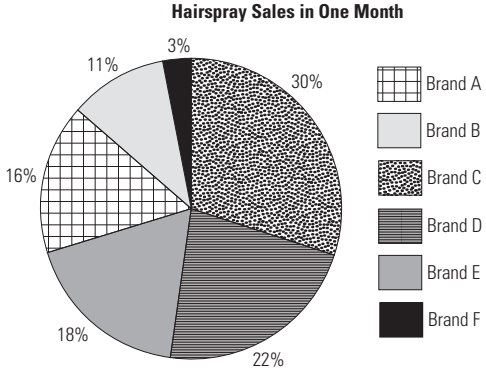
b) There will be one more sector and the sectors will all be smaller. The number of students will now be 128.



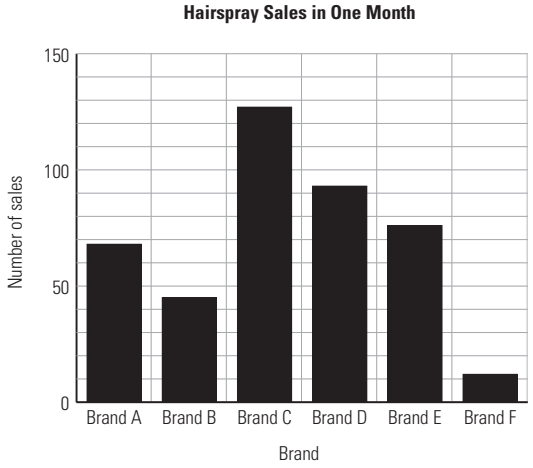
5.



6. a)



b) The information could have been displayed on a bar graph.

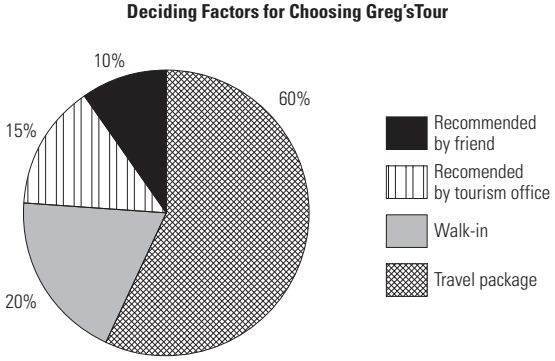


PRACTISE YOUR NEW SKILLS, P. 117

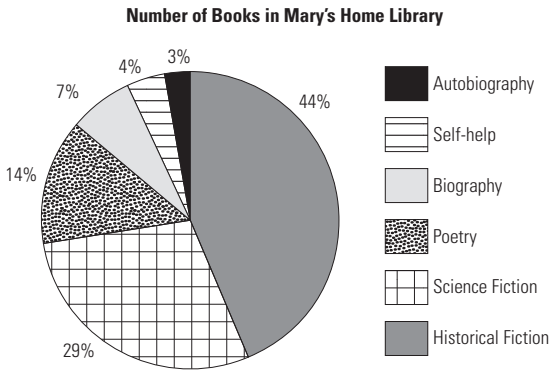
1. a) 137 b) 38%

c) 16°

2.



3.



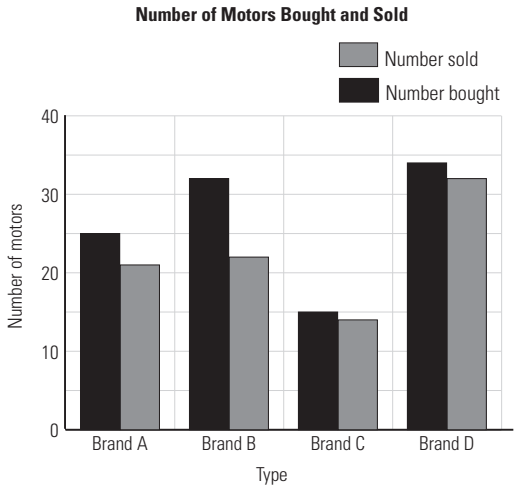
CHAPTER TEST, P. 119

1. a)

b) 2003

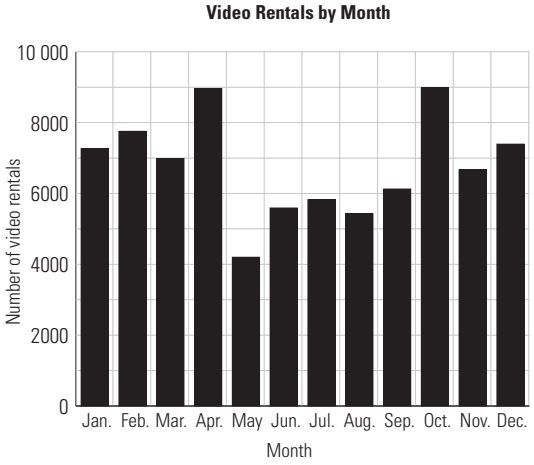
c) 2003 was the peak year for the company's profits; profits were much higher that year than in 2002 or 2004. In 2004, the profits then dropped down to what they had been during the two previous years (2001–2002). They made a steady increase over the next three years and seem to have levelled off over the last three years.

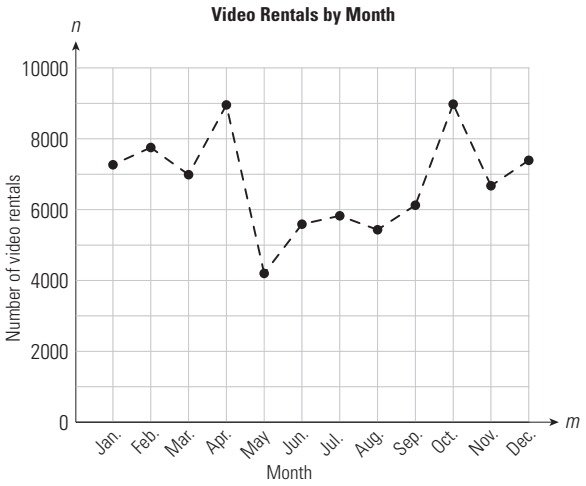
2. a)



b) Brand C, 1 c) Brand D, 11

3. a) Either a broken line graph or a bar graph (vertical or horizontal) could be used, because the data is discrete.





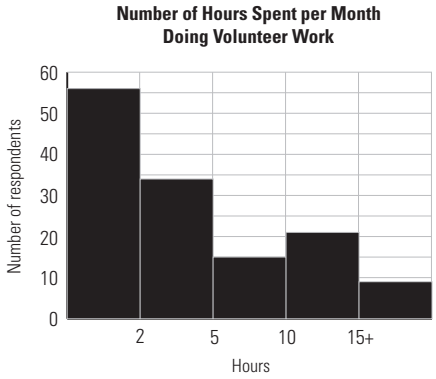
b) Most: October (8978)

Least: May (4199)

c) There is no real general trend, although rentals tend to be a bit lower in the summer months.

4. Housing: $1140.00; Food: $600.00; Car: $480.00; Miscellaneous: $390.00; Charitable donations: $180.00; Entertainment: $120.00; Savings: $90.00.

5. a)



b) 90

c) 33%

CHAPTER 3
SURFACE AREA, VOLUME, AND CAPACITY
3.1 SURFACE AREA OF PRISMS

BUILD YOUR SKILLS, P. 127

1. a) circle, 6082.1 mm^2

   b) triangle, 26.5 m^2

   c) parallelogram, 78.4 cm^2

   d) triangle, 72 in^2

2. a) rectangle, 44.2 m^2

   b) parallelogram, 44.2 m^2

   c) triangle, 22.1 m^2

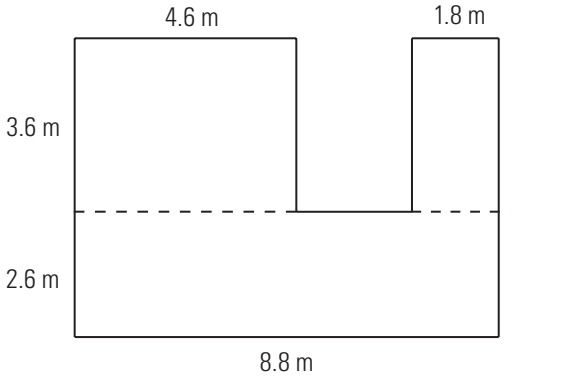
   d) triangle, 22.1 m^2

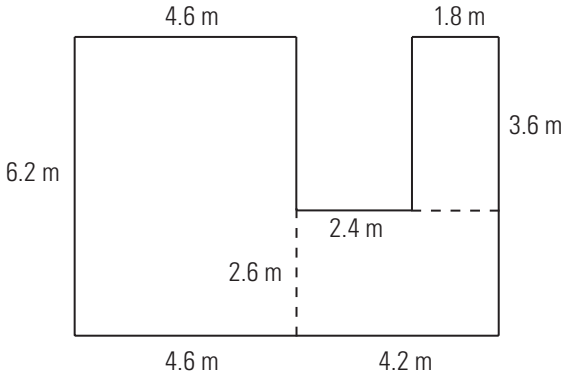
   e) triangle, 22.1 m^2

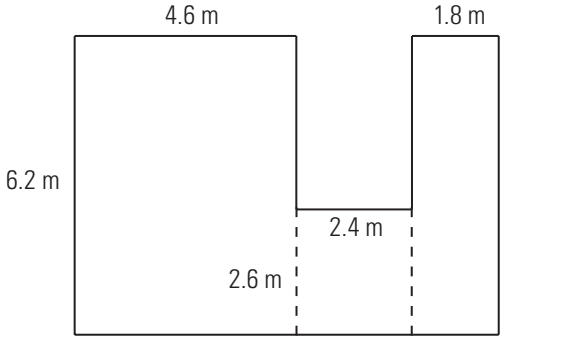
   f) Areas of rectangles and parallelograms are the same if they have the same base and height. Areas of triangles are the same if they have the same height and base. A triangle with the same base and height as a rectangle has half the area of the rectangle.

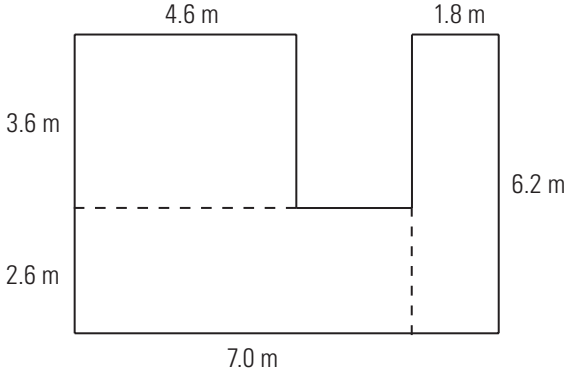
3. a) 92.5 in^2 b) 190.0 m^2

4.









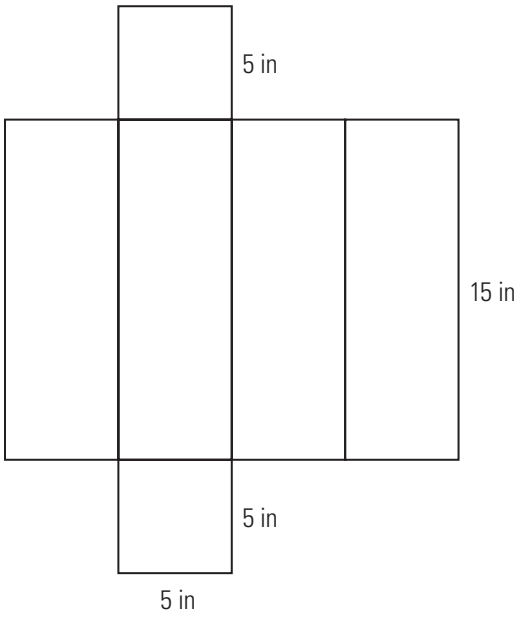
Area ≈ 45.9 m^2

5. See table on following page.

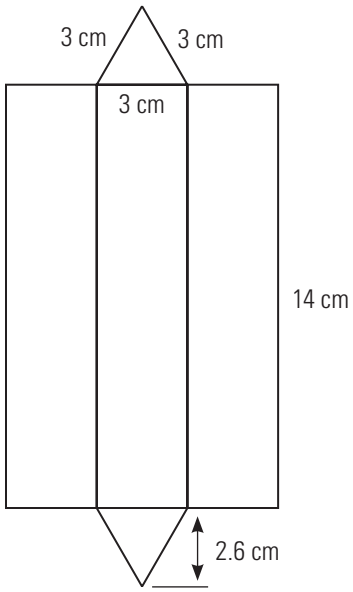
3.1 Surface Area of Prisms, Build Your Skills, Question 5.

Prism	*Shape of base*	*Right or oblique*	*Shape of lateral faces*	*Name of prism*
a)	triangular	oblique	parallelogram	oblique triangular prism
b)	rectangular	right	rectangular	right rectangular prism
c)	pentagonal	right	rectangular	right pentagonal prism
d)	trapezoidal	oblique	parallelogram	oblique trapezoidal prism
e)	octagonal	right	rectangular	right octagonal prism
f)	rectangular	oblique	parallelogram	oblique rectangular prism

6. a)

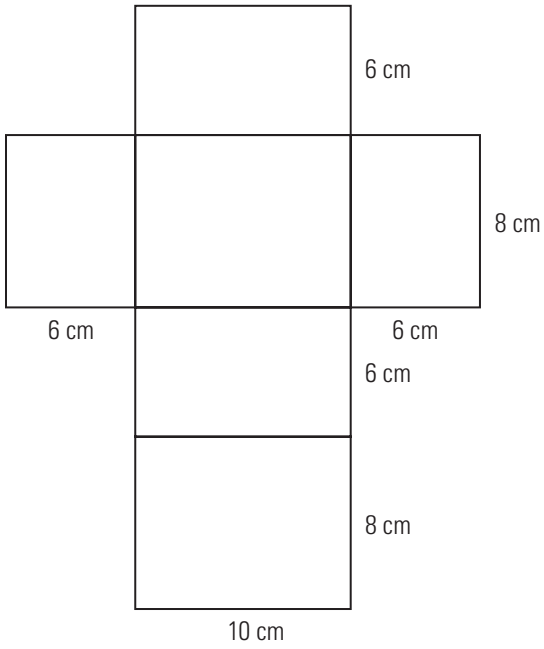


b)



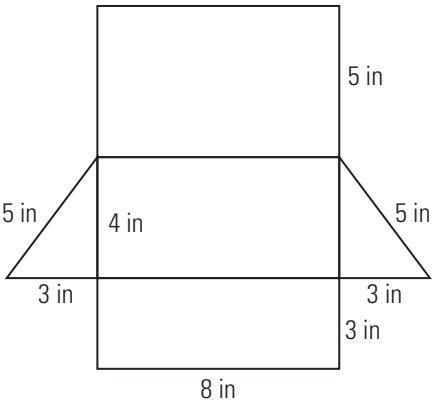
7. Ralph is correct. Manon's net is missing one of the side panels.

8. a)



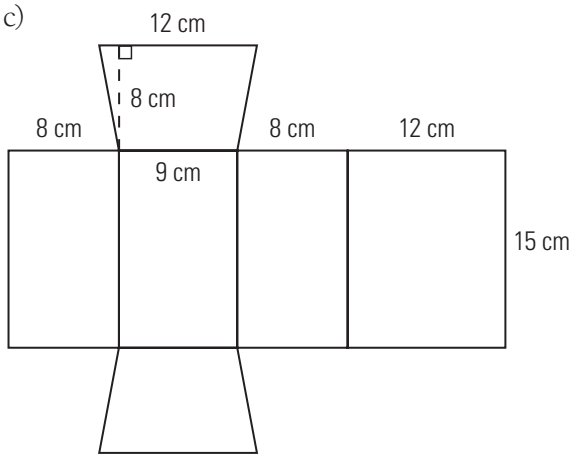
SA ≈ 376 cm^2

b)



SA ≈ 108 in^2

c)



SA ≈ 735 cm^2

9. 14.5 m^2

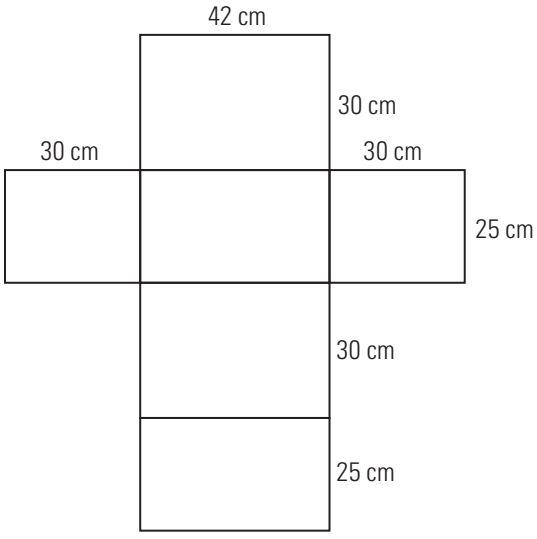
10. 2000 cm^2

11. a) 31 800 cm^2 b) 38 160 cm^2

12. 66.5 ft^2

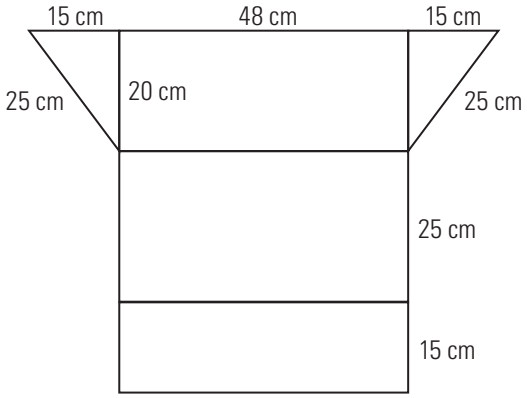
PRACTISE YOUR NEW SKILLS, P. 146

1. a)



SA ≈ 6120 cm^2

b)



SA ≈ 3180 cm^2

2. 66 ft^2

3. 2.2 m^2

4. 9110 ft^2

3.2 SURFACE AREA OF PYRAMIDS, CYLINDERS, SPHERES & CONES

BUILD YOUR SKILLS, P. 149

1. 16.2 ft^2

2. 29.7 cm^2

3. 74 319 mm^2

4. 61.2 m^2

5. 265.8 cm^2

6. 972.6 mm^2

7. 1960 cm^2

8. 1260 cm^2

9. 942.5 cm^2

10. 384 cm^2

11. 443.5 cm^2

12. 10.6 cm

13. 9676.1 cm^2

14. 354.7 cm^2

15. 2091.6 in^2

16. 15 253 mm^2

17. 1536.3 cm^2

18. 21.2 m^2

19. 1932.2 mm^2

20. 2150.4 cm^2

21. 8.3 m^2

22. 213.6 ft^2

23. 848.2 cm^2

PRACTISE YOUR NEW SKILLS, P. 167

1. 106 in^2

2. 141 370 mm^2

3. 1766.2 ft^2

4. 130.2 ft^2

5. 1017.9 ft^2

6. 564.1 cm^2

3.3 VOLUME AND CAPACITY OF PRISMS AND CYLINDERS

BUILD YOUR SKILLS, P. 171

1. a) 3690 cm^3, 3.69 L

   b) 34 m^3, 34 000 L

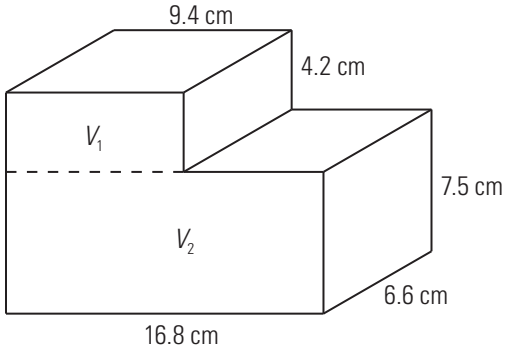
   c) 12.7 in^3, 0.055 US gal or 207 cm^3, 207 mL

2. 3.5 m

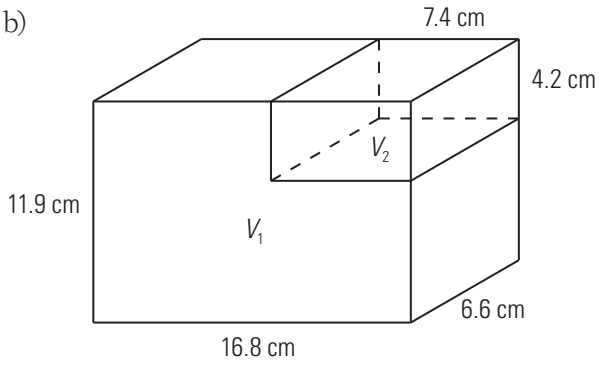
3. 24.7 cm

4. 700 trips

5. a)



   b)



6. 4464 m^3

7. 6.2 cm

8. 6362 cm^3, 6.4 L

9. 32 967 cm^3, 33 L

10. 17.0 cm

PRACTISE YOUR SKILLS, P. 179

1. a) 111.4 cm^3 b) 34.6 cm^3

   c) 81.3 m^3

2. rectangular prism

3. 31 667 ft^3

4. a) 4.1 m^3 b) 9840 kg

5. 25 cm

6. 1.1 m

3.4 VOLUME AND CAPACITY OF SPHERES, CONES, AND PYRAMIDS

BUILD YOUR SKILLS, P. 183

1. a) 2572 cm^3 b) 248 475 cm^3

2. a) 1 431 058 cm^3 b) 1431 L

3. a) 1615 in^3 b) 40 ft^3

   c) 154.5 cm^3

4. V ≈ 4840 ft^3, capacity ≈ 36 206 US gal or
   V ≈ 137.1 m^3, capacity ≈ 137 100 L

5. 3584 in^3

6. a) 7309 mm^3 b) 2663 in^3

   c) 637 in^3 d) 806 mm^3

7. a) 379.6 in^3 b) 961 cm^3

   c) 198 m^3

8. 270.2 mm

9. 851 cm^3

PRACTISE YOUR NEW SKILLS, P. 192

1. a) 1047 mm^3 b) 515 mm^3

   c) 30.6 mm^3 d 271 mm^3

2. 2548 US gal

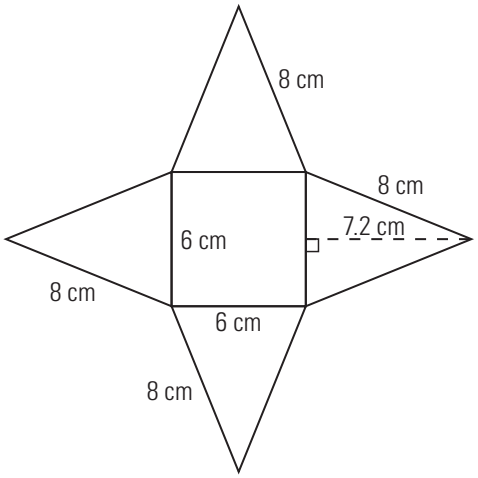
3. a) 631 cm^3 b) 631 mL

4. 6.4 m^3

5. 664 mL

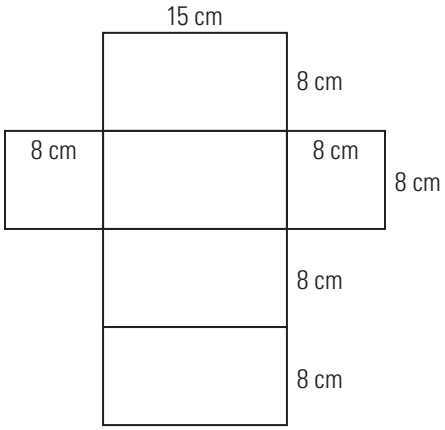
CHAPTER TEST, P. 194

1. a)



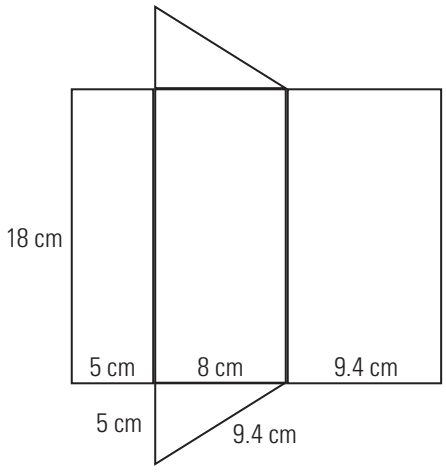
SA = 99.5 cm^2

b)



SA = 608 cm^2

c)



SA = 444 cm^2

2. SA = 87 m^2, V = 45 m^3
3. a) 158.7 cm^2 b) 106 cm^3
   c) 106 mL
4. a) 39 408 mm^2 b) 735 619 mm^3
5. SA = 2372 cm^2, V = 6149 m^3
6. 33.9 m^3
7. $1635.30

CHAPTER 4
TRIGONOMETRY OF RIGHT TRIANGLES
4.1 SOLVING FOR ANGLES, LENGTHS, AND DISTANCES

BUILD YOUR SKILLS, P. 200

1. a) $\tan \theta \approx 0.6423$; $\theta \approx 32.7°$
   b) $\sin \theta \approx 0.7826$; $\theta \approx 51.5°$
   c) $\cos \theta \approx 0.7097$; $\theta \approx 44.8°$
2. 16.7 cm
3. 35.6 cm
4. 54°
5. x = 7.1 cm, z = 3.7 m
6. 40.2°, 19.4 cm
7. 153.6 m
8. 265.9 m
9. 11.94 m
10. 72 m^2

PRACTISE YOUR NEW SKILLS, P. 210

1. a) 18.4 m b) 5.4 m
   c) 21.3 cm d) 4.4°
   e) 80.7° f) 19.2 cm
   g) 8.6 m h) 57.7°
2. 4.3 m
3. 9.7 m
4. 34.8°, 287.4 m
5. a = 2.5 ft, b = 1.5 ft, c = 53°, d = 3.5 ft

4.2 SOLVING COMPLEX PROBLEMS IN THE REAL WORLD

BUILD YOUR SKILLS, P. 215

1. 5.2 m
2. a) $x \approx 12.7$ cm, $y \approx 19.0$ cm
   b) $x \approx 11.6$ m, $y \approx 10.0$ m
3. $x \approx 8.5$ cm, $y \approx 6.4$ cm, $h \approx 17.1$ cm
4. 560 m
5. a) 12.7 ft b) 5.9 ft
6. 137 m or 439 m
7. a) 65.0 m b) 82.6 m
8. a) 210.3 km b) 1.9°
9. 65.2 m

PRACTISE YOUR NEW SKILLS, P. 223

1. a) $x \approx 7.1$ cm, $y \approx 8.4$ cm

b) $\theta = 33°$, $x = 40$ cm, $y \approx 47.7$ cm

c) $\theta \approx 42.0°$, $x \approx 78.4$ ft, $y \approx 81.1$ ft

2. G $\approx 43.2°$, $x = 8.5$ ft, $y = 11.5$ ft

3. a) 43.7 m b) 68.2°

4. a) 36.4 m b) 49.9 m

5. 160 m

CHAPTER TEST, P. 226

1. a) 2.8 m b) 35.0°

c) 73.9° d) 39.8 in

2. a) $x \approx 10.1$ cm, Y $\approx 47.7°$

b) X $\approx 53.6°$, $y \approx 8.4$ cm, $z \approx 10.4$ cm

c) $x \approx 5.9$ cm, Y $\approx 48.4°$, $z \approx 3.3$ cm

3. 173.9 m^2

4. 87.4 cm

5. 45 m

6. a) 67.5 m b) 32.7°

7. a) 82.8 km b) 4.1°

CHAPTER 5
SCALE REPRESENTATIONS
5.1 SCALE DRAWINGS AND MODELS

BUILD YOUR SKILLS, P. 233

1. a) 63 b) 1

c) 2 d) 918

e) 11 f) 17

2. a) 14.4 b) 25.7

c) 1.8 d) 173.4

3. 20 years

4. 431 km

5. 50 000 000

6. a) 200:1

b) 0.005 cm

7. 1:35.7

8. 5.9 m

9. a) The picture is 4.7 cm long.

Scale = 47:4200

b) 4.59 m

c) 2.4 cm

10. a) 0.304 cm or 3 mm

b) 375 cm or 3.75 m

c) It is unlikely that the same scale would be used because the sizes are very different. For the cat, you would probably use a scale of 1:*c*. That is, you would represent it smaller than it actually is. The only time you might use the same scale for them is if, for some reason, you needed to compare how small the mite would be on the cat.

PRACTISE YOUR NEW SKILLS, P. 241

1. 52

2. 15.5 cm

3. a) 13:1200 b) 10 ft 7 in × 15 ft 5 in

   c) 7 ft 8 in × 9 ft 6 in

4. a) 1:2504

   b) 2.3 cm

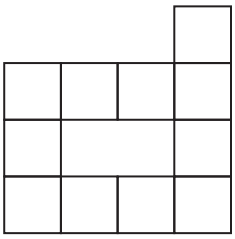
5. height: 243 cm; width: 162 cm; depth: 30 cm

6. 16 m

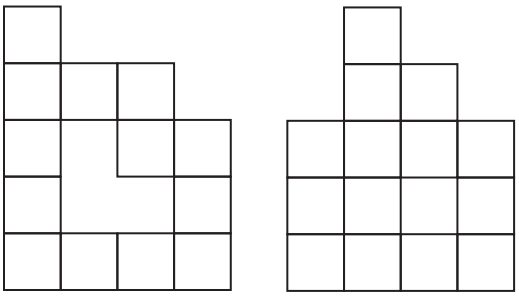
5.2 TWO-DIMENSIONAL REPRESENTATIONS

BUILD YOUR SKILLS, P. 246

1.

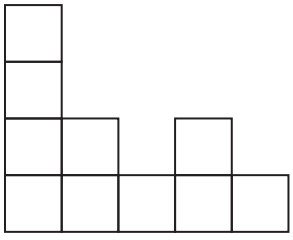


TOP



FRONT SIDE

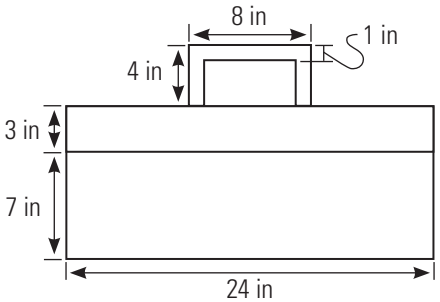
2. a)



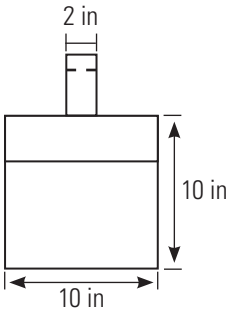
FRONT

   b) No, there might be some blocks we cannot see, hidden by the tower.

3.

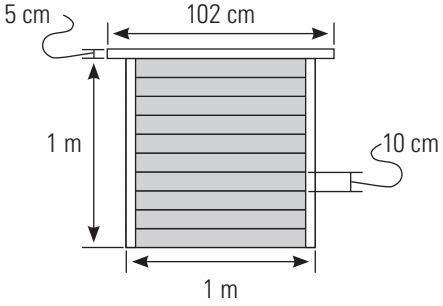


FRONT VIEW

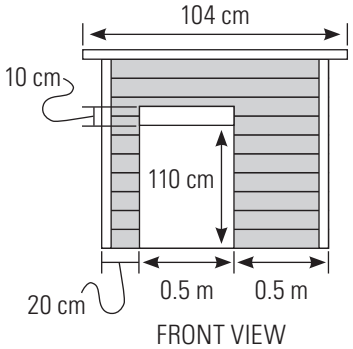


SIDE VIEW

4. SCALE 1:40

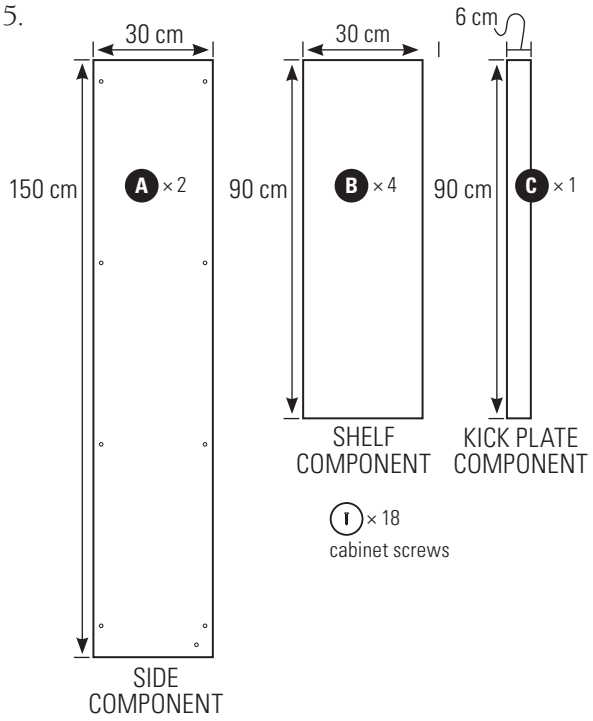


SIDE VIEW



FRONT VIEW

5.

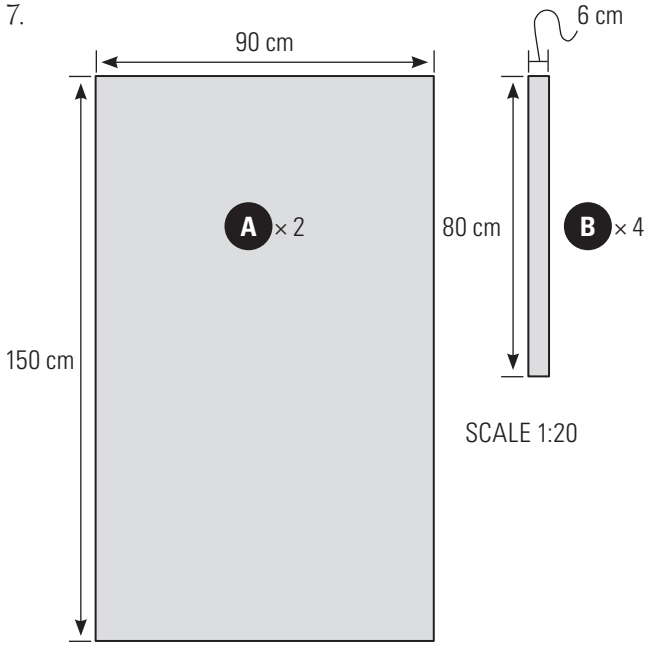


6. a) 1:6

b) She can make a quilt that will have square patches, but it will be smaller than she planned because she forgot about the seam allowance.

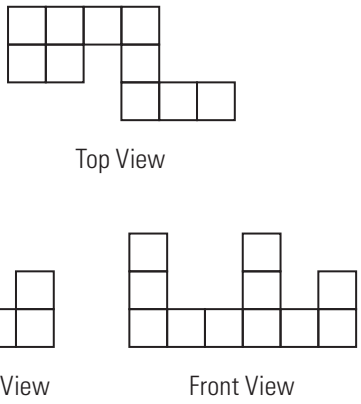
c) $6\frac{3}{4}$"

7.

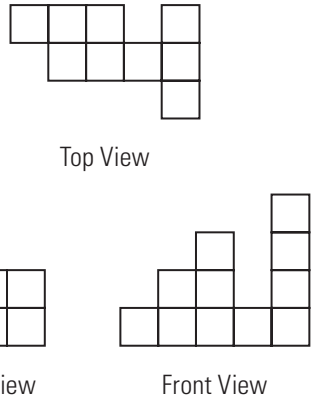


PRACTISE YOUR NEW SKILLS, P. 252

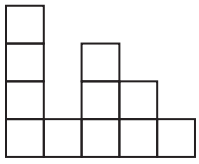
1.



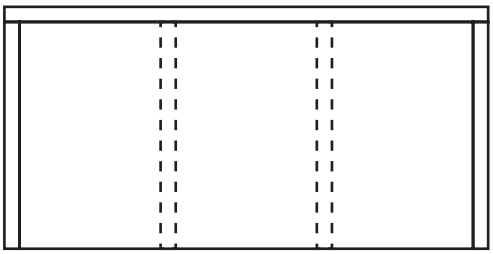
2. a)



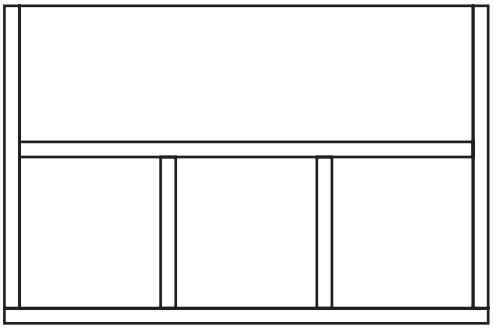
b)



3. SCALE 1:6



Top View



Front View

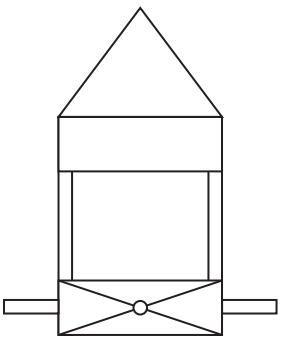
4. a) 2:700

   b) width: 7 cm; height: 14 cm

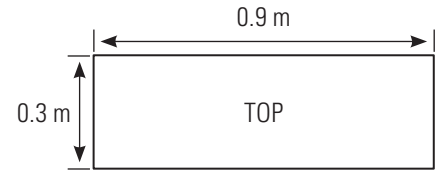
   c) No, you do not have enough information to draw top and side views of the house.

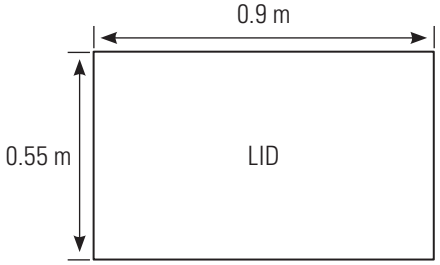
5. a) She will need to provide a front view. She does not need to provide side views, since all the sides are the same. She does not need to provide a top view, because the roof can be seen on the front view.

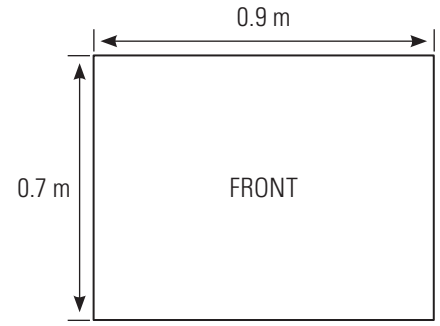
b)

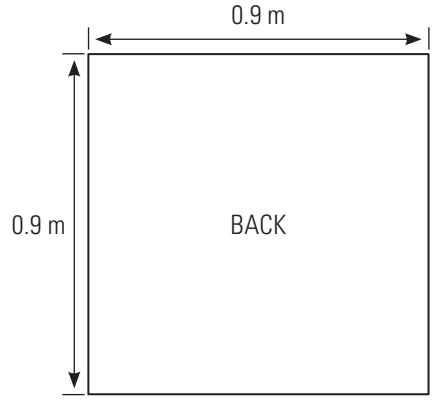


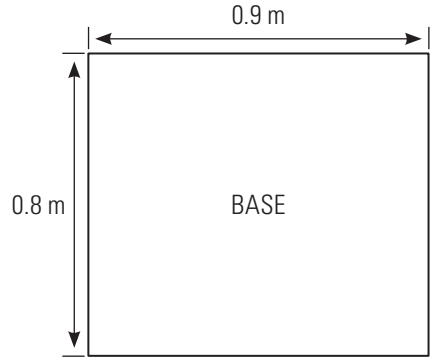
6. SCALE 1:20

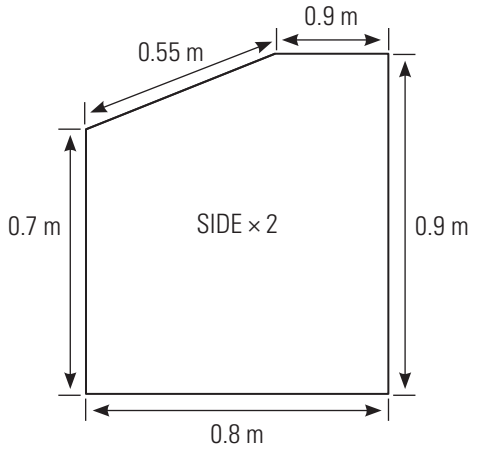




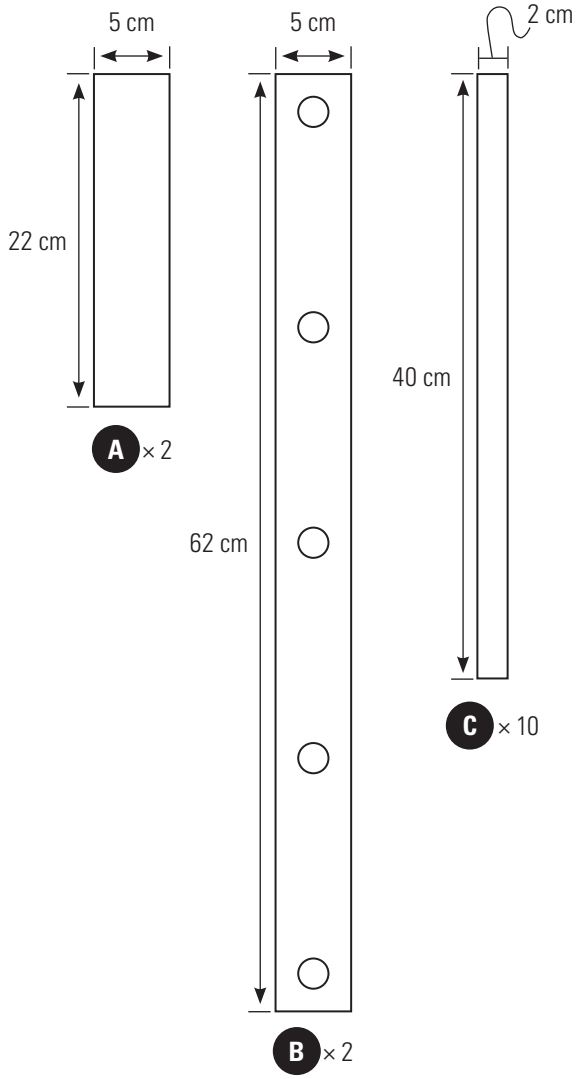








7. SCALE 1:5

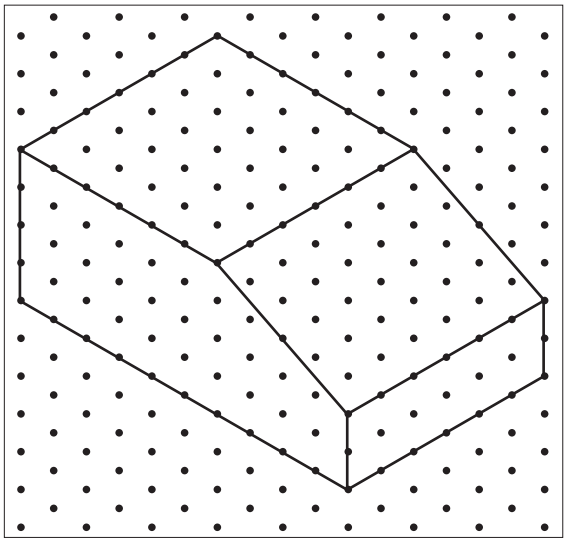


5.3. THREE-DIMENSIONAL REPRESENTATIONS

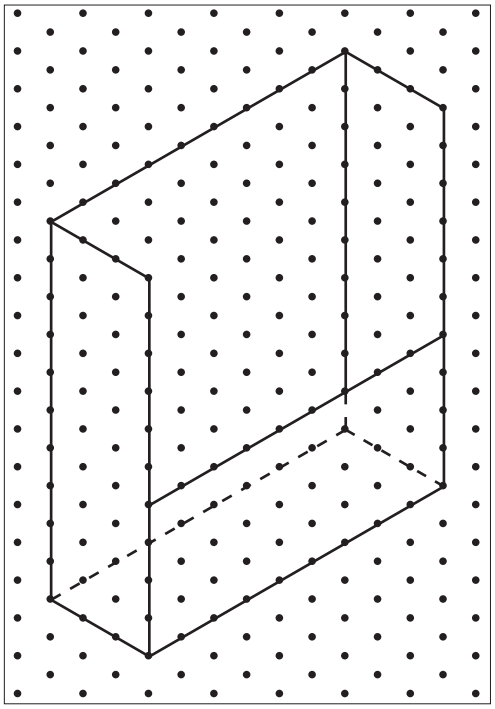
BUILD YOUR SKILLS, P. 260

1. $x = 2$ ft, $y = 10$ ft, $z = 16$ ft, $h = 8$ ft

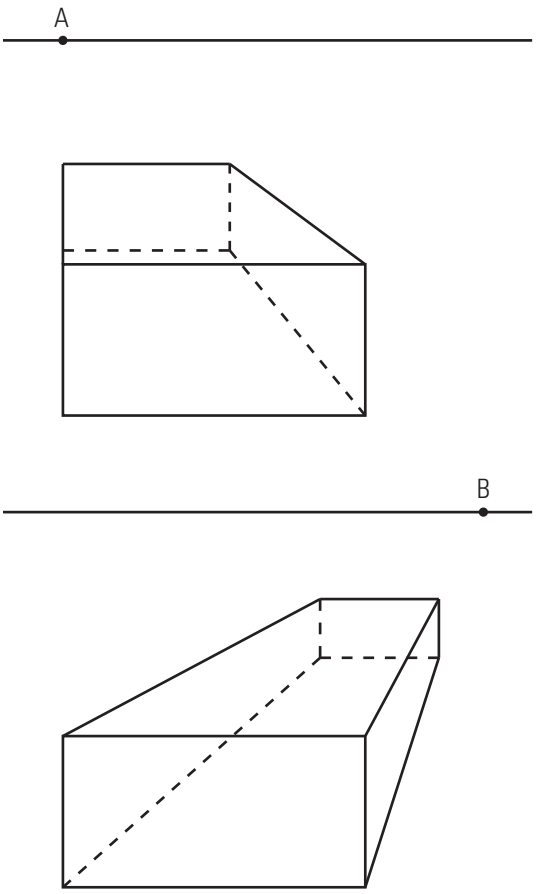
2. SCALE 1:20



3. SCALE 1:60

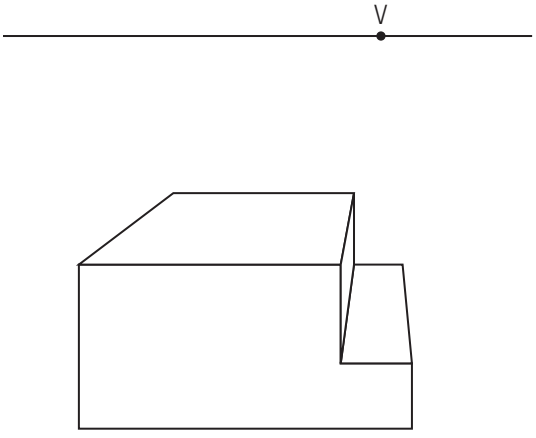


4.

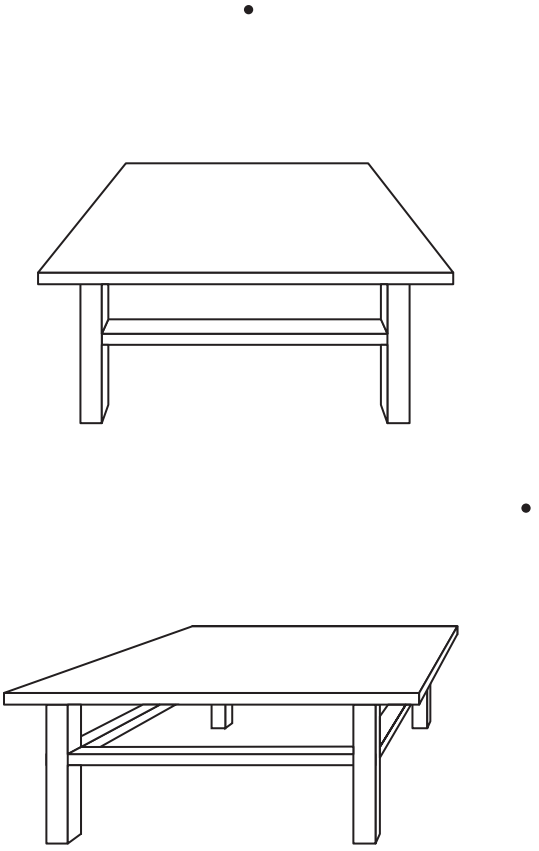


The two drawings will not look exactly alike because they depend on the location of the vanishing point and how deep you choose to make your boxes. Even if you choose to make the boxes the same depth, they will look slightly different because of the angle to the vanishing point.

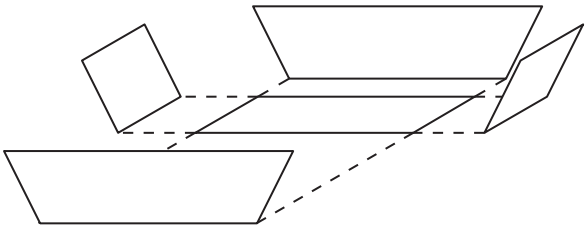
5.



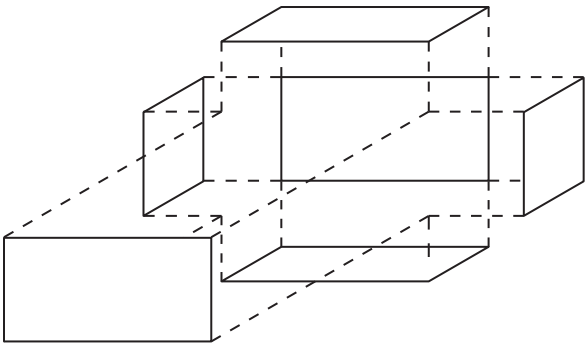
6. Answers will very depending on the location of the vanishing point. Two possible answers:



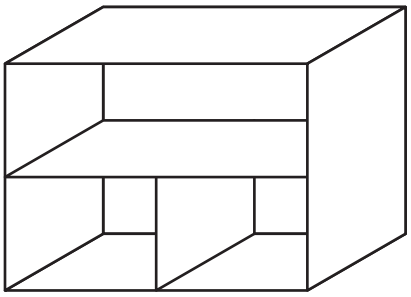
7.



8.



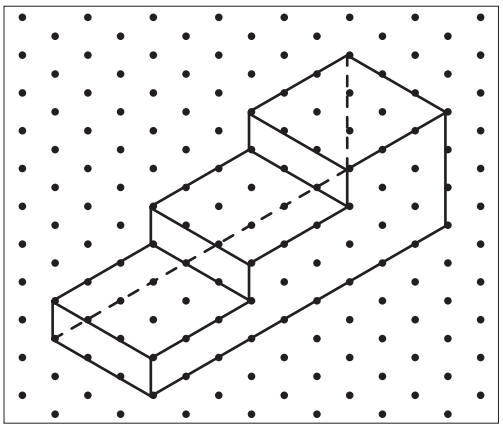
9.



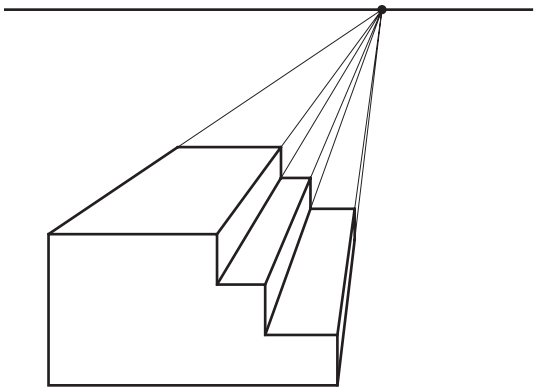
PRACTISE YOUR NEW SKILLS, P. 269

1. See diagram on the next page.

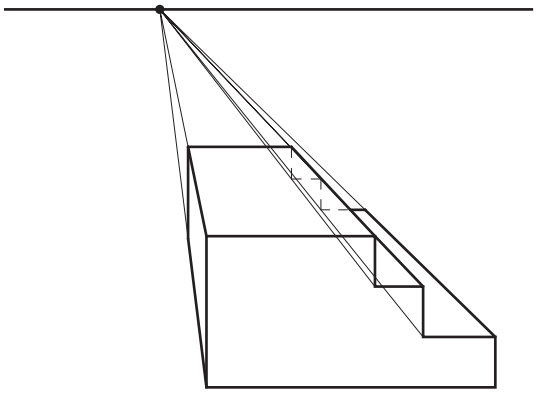
2.



3. a)

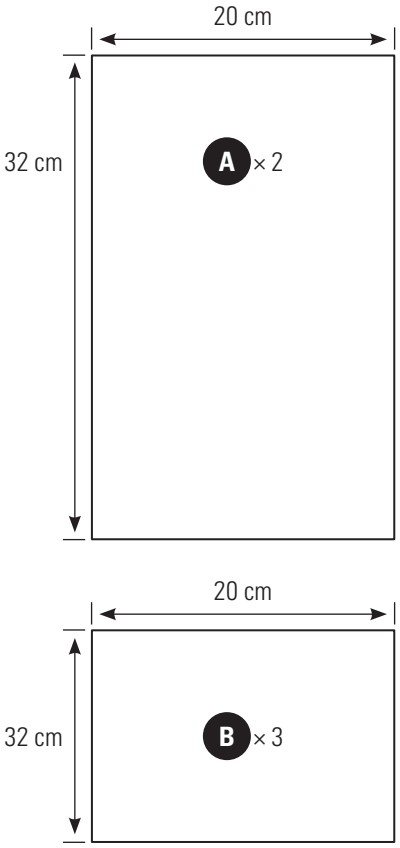


b)



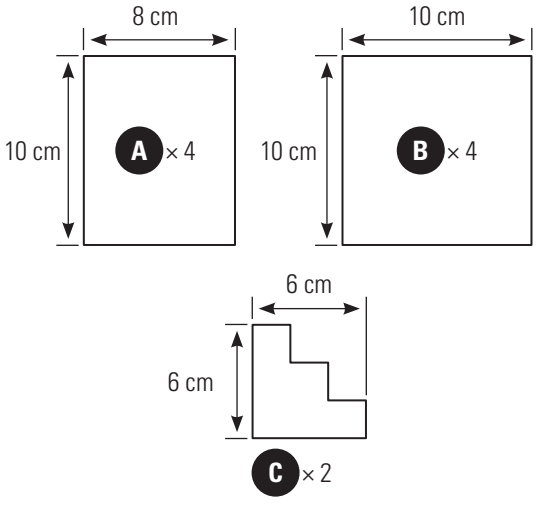
c) The perspectives and the angles to the vanishing point are different.

4.



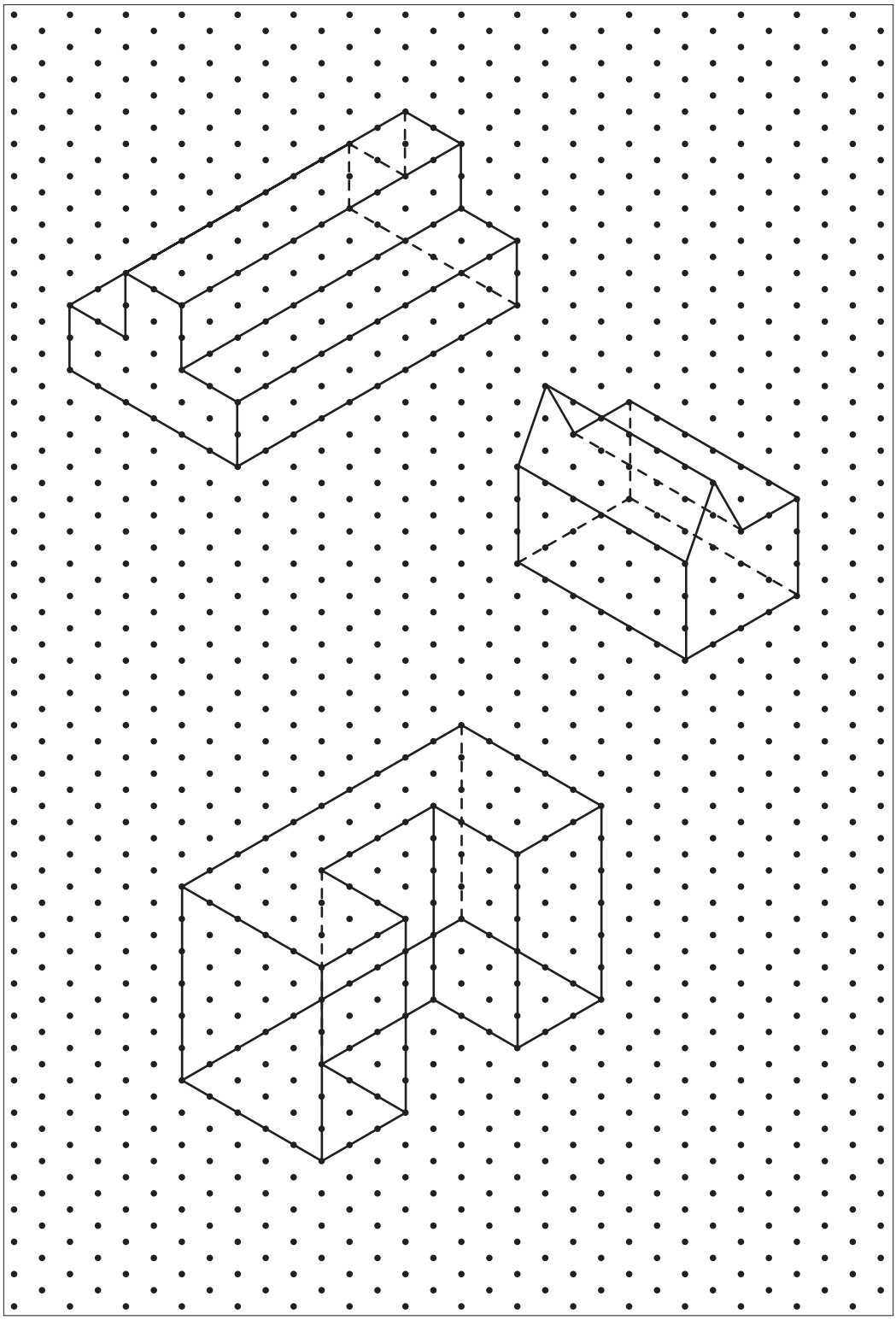
SCALE 1:5

5. a) SCALE 1:5

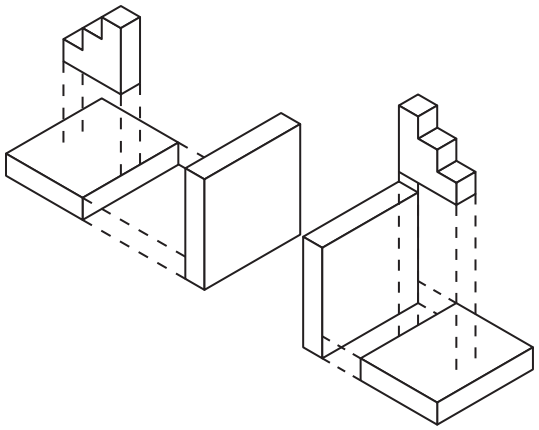


5.3 Three-Dimensional Representations, Practise Your New Skills, Question 1.

SCALE 1:1

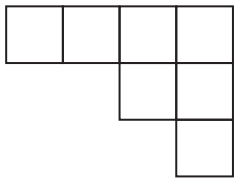


b)

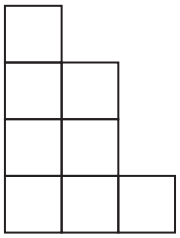


CHAPTER TEST, P. 273

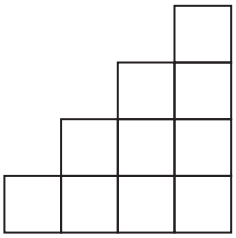
1. a) $\frac{1}{128}$ b) 38.4 m
2. 7:35 000 000
3. 702 cm
4. a) 1:15 b) $\frac{1}{15}$
   c) 8.4 cm
5.



TOP

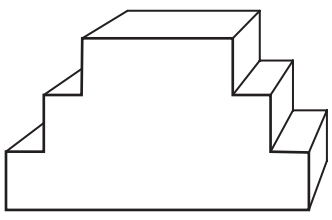


SIDE

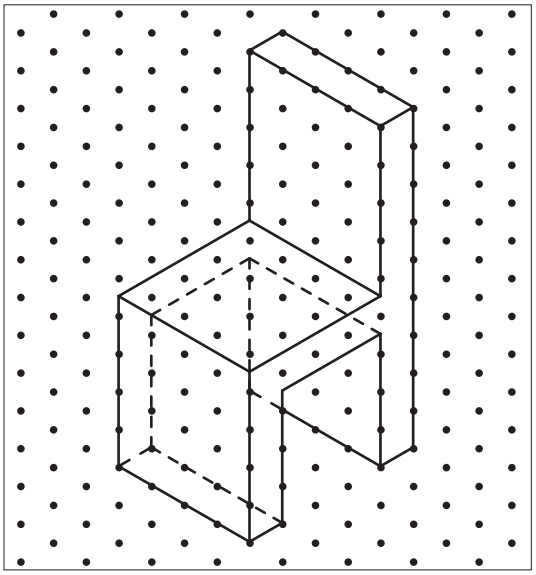


FRONT

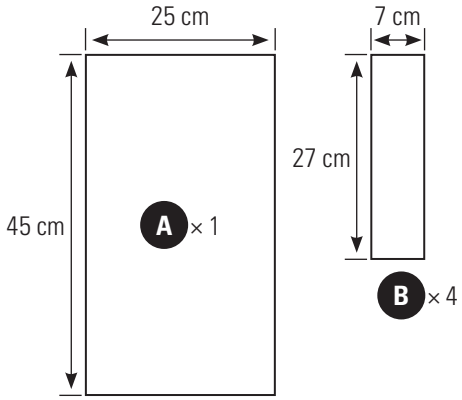
6.



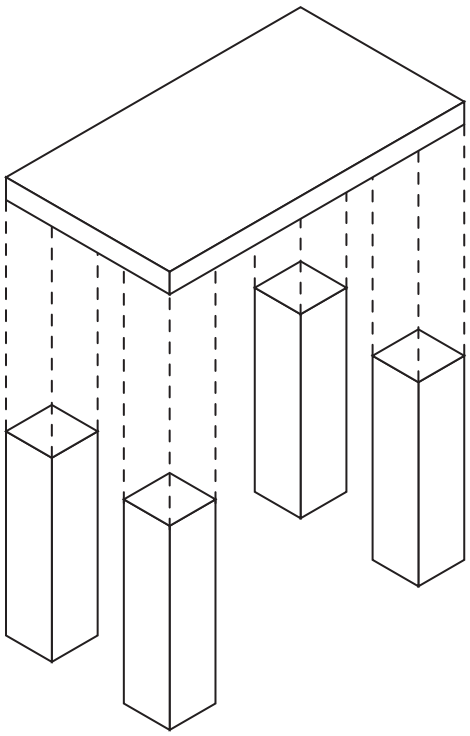
7.



8. a) SCALE 1:10



b)



CHAPTER 6
FINANCIAL SERVICES
6.1 CHOOSING AN ACCOUNT

BUILD YOUR SKILLS, P. 282

1. a) $5.50 b) $0
2. a) $33.75 b) $24.50
3. $5.90
4. See table on the next page.

   End of month balance: $2775.47
5. $97.58
6. $626.81

PRACTISE YOUR NEW SKILLS, P. 287

1. $10.00
2. $0
3. Full-Service Account
4. a) See table on the next page.

   b) No, she should switch to a Full-Service Account.
5. $19.93

6.2 SIMPLE AND COMPOUND INTEREST

BUILD YOUR SKILLS, P. 292

1. a) $25.00 b) $50.00

   c) $50.00 d) $50.00

   e) The interest doubles.

   f) The interest doubles.
2. $712.50
3. $1450.00
4. $5304.50
5. $14.87
6. $1051.27
7. a) $5474.28 b) $5491.14

   c) $5499.76 d) $5505.58
8. $7.10
9. **INTEREST TABLE**

Interest period	*Investment value at beginning of period*	*Interest earned (I = Prt)*	*Investment value at end of period*
1	$3000.00	$24.38	$3024.38
2	$3024.38	$24.57	$3048.95
3	$3048.95	$24.77	$3073.72
4	$3073.72	$24.97	$3098.69
5	$3098.69	$25.18	$3123.87
6	$3123.87	$25.38	$3149.25
7	$3149.25	$25.59	$3174.84
8	$3174.84	$25.80	$3200.64

10. a) 18 years b) 29.4 years

    c) 36.9 years

PRACTISE YOUR NEW SKILLS, P. 301

1. a) I = $40.00 , A = $440.00

   b) I = $103.13, A = $853.13

   c) I = $450.00, A = $1450.00

   d) I = $426.60, A = $1626.60
2. a) $442.05 b) $860.42

   c) $1566.99 d) $1711.27

6.1 Choosing an Account, Build Your Skills, Question 4.

Transaction	*Description*	*Withdrawal*	*Deposit*	*Balance*
				$1798.53
Direct deposit	Paycheque		$1432.51	$3231.04
ATM	Cash	$200.00		$3031.04
Bank card	Groceries	$63.95		$2967.09
Bank card	Clothes	$75.32		$2891.77
Bank card	Movie	$24.50		$2867.27
Teller	Hydro bill	$89.56		$2777.71
Direct deposit	Paycheque		$1432.50	$4210.21
ATM	Cash	$100.00		$4110.21
Auto-withdrawal	Loan payment	$375.86		$3734.35
Bank card	Groceries	$154.32		$3580.03
Bank card	Gas	$56.23		$3523.80
Bank card	Dinner	$25.38		$3498.42
Auto-withdrawal	Rent	$575.00		$2923.42
Bank card	Books	$123.45		$2799.97
Auto-withdrawal	Monthly banking fee	$24.50		$2775.47

6.1 Choosing an Account, Practise Your New Skills, Question 4.

Transaction	*Description*	*Withdrawal*	*Deposit*	*Balance*
				$4986.54
ATM	Cash	$250.00		$4736.54
Bank card	Dinner	$25.32		$4711.22
Bank card	Groceries	$145.93		$4565.29
Direct deposit	Paycheque		$524.66	$5089.95
Bank card	Movie	$12.98		$5076.97
ATM	Cash	$100.00		$4976.97
Bank card	Gas	$48.96		$4928.01
Teller	Utilities	$123.23		$4803.78
Auto-withdrawal	Rent	$550.00		$4253.78
Direct deposit	Paycheque		$524.65	$4778.43
Bank card	Groceries	$165.24		$4613.19
ATM	Cash	$100.00 + $0.50		$4512.69
Teller	Phone	$47.25 + $1.00		$4464.44
Bank card	Misc)	$12.32 + $0.50		$4451.62
Bank card	Dinner	$15.88 + $0.50		$4435.24
ATM	Cash	$200.00 + $0.50		$4234.74
Bank card	Prescription	$32.54 + $0.50		$4201.70

3.

INTEREST TABLE

Interest period	*Investment value at beginning of period*	*Interest earned (I = Prt)*	*Investment value at end of period*
1	$1000.00	$19.25	$1019.25
2	$1019.25	$19.62	$1038.87
3	$1038.87	$20.00	$1058.87
4	$1058.87	$20.38	$1079.25

4. a) $4376.68 b) $5399.37

5. a) 26 years b) $2050.32

6. a) $1133.00 b) 28.8 years

7. 1.90% per annum compounded annually

8. a) $6463.14 b) $6479.20
   c) $6482.83 d) $6484.59

6.3 CREDIT CARDS AND STORE PROMOTIONS

BUILD YOUR SKILLS, P. 306

1. a) $16.64 b) $22.55
   c) $560.27

2. $577.91

3. a) $1207.05 b) $60.35
   c) $1164.72

4. a) 12 days b) $554.50
   c) $562.01

5. $294.62

6. 3.70%

7. Option 3

8. 1.78%

PRACTISE YOUR NEW SKILLS, P. 313

1. a) $79.19 b) $161.31

2. $1573.76

3. a) $964.84 b) $48.24

4. a) $66.10 b) $2591.47

5. Option 1

6.4 PERSONAL LOANS, LINES OF CREDIT, AND OVERDRAFTS

BUILD YOUR SKILLS, P. 317

1. 243%

2. a) 137% b) 0.375%

3. $15.15

4. $640.00

5. 4 days

6. a) $1300.00 b) 182.5%

7. a) monthly payment = $137.04,
   total paid = $3288.96,
   finance charge = $288.96

   b) monthly payment = $65.85,
   total paid = $2370.60,
   finance charge = $245.60

   c) monthly payment = $263.58,
   total paid = $12651.84,
   finance charge = $1151.84

8. a) $1800.00 b) $80.19/month
   c) $1924.56 d) $3024.56

PRACTISE YOUR NEW SKILLS, P. 322

1. a) 1.0% b) 358%
2. $302.65
3. a) monthly payment = $78.35,
   total paid = $2820.60,
   finance charge = $320.60

   b) monthly payment = $194.50,
   total paid = $11 670,
   finance charge = $1670

   c) monthly payment = $64.97,
   total paid = $1559.28,
   finance charge = $59.28
4. a) $223.85/month b) $5372.40

   c) $372.40
5. a) $111.37/month

   b) She should choose Option 1.

CHAPTER TEST, P. 325

1. See table below.
2. a) $1250.00 b) $6250.00
3. $1500.00
4. $6400.42
5. $349.35
6. a) 18.28 b) $49.80
7. a) $897.37 b) $44.87
8. a) 1.10% b) 417.00%
9. a) $74.34/month

   b) 5.06 %

   c) Option 1 = $2089.36

   Option 2 = $2160.00

   He should choose Option 1.

6.4 Personal Loans, Lines of Credit, and Overdrafts, Chapter Test, Question 1.

Transaction	*Description*	*Withdrawal*	*Deposit*	*Balance*
				$2 879.54
ATM	Cash	$200.00		$2 679.54
Direct deposit	Paycheque		$457.21	$3 136.75
Bank card	Groceries	$172.12		$2 964.13
Bank card	Gas	$42.54		$2 922.09
ATM	Cheque – reimbursement		$175.64	$3 097.73
Bank card	Dinner	$32.42		$3 066.31
ATM	Cash	$100.00		$2 966.31
Auto-withdrawal	Hydro	$112.21		$2 853.10
Direct deposit	Paycheque		$457.21	$3 310.31
Auto-withdrawal	Rent	$645.00		$2 665.31
Bank card	Car repairs	$276.97 + $0.50		$2 387.84
Bank card	Movie	$28.12 + $0.50		$2 359.22
ATM	Cash	$200.00 + $0.50		$2 158.72

CHAPTER 7
PERSONAL BUDGETS
7.1 PREPARING TO MAKE A BUDGET

BUILD YOUR SKILLS, P. 282

1.

Item	*Classification*	*Reason*
Semi-monthly paycheque	Regular	This paycheque will happen twice a month.
Birthday gift	Variable	You don't know what you'll get for your birthday and it only happens once a year.
Tips	Variable	You don't know how many tips you'll get in a shift.
Interest from investment	Regular	Your investments will have regular interest payments.
Tax refund	Variable	You don't know how much tax you'll pay or get refunded each year until you do your taxes.

2.

Item	*Classification*	*Reason*
Rent	Recurring	You will have to pay the same rent every month.
New shoes	Variable	You don't need to buy new shoes often enough to plan on this.
Loan payments	Recurring	You will have an agreement with whoever issued the loan on a repayment schedule.
Car repairs	Unexpected	You can't plan when your car will break down.
Groceries	Variable	You don't know how much you'll spend on groceries each trip, but you do have to do it regularly.
Meal at restaurant	Variable	You don't know how much you'll spend every time you go for dinner, but you can budget for it.
Replacing broken cell phone	Unexpected	You can't plan when you break your cell phone.
Car insurance	Recurring	You will have an agreed rate of car insurance with your insurance broker.

3.

Item	*Income*	*Expense*
Paycheque: $250.98	Regular	
John's birthday: $54.25		Variable
Commission: $75.00	Variable	
Babysitting: $40.00	Variable	
Paycheque: $123.42	Regular	
Loan payment: $125.00		Regular
Donation to earthquake relief fund: $25.00		Variable
Car insurance: $115.32		Regular
Savings: $50.00		Variable
Rent: $450.00		Regular
Cell phone bill: $45.00		Regular
Meal at restaurant: $56.76		Variable

4. $33.98

5. $175.63, 7.1%

6. No, she will have $571.32 saved.

7. 6 months

8. She will be $108.00 short of her goal.

PRACTISE YOUR NEW SKILLS, P. 338

1.

Item	*Income*	*Expense*
Paycheque	Regular	
Rent		Regular
Car insurance		Regular
Gas		Variable
Clothing		Variable
Cell phone bill		Regular
Mother's Day gift for mom		Variable
Groceries		Variable
Present for Joan		Variable
Entertainment		Variable
Mowing lawns	Variable	
Utilities		Variable

2. a) $215.00 b) 17%

   c) Yes, she will have $1290.00 saved.

3. $25.00/month

4. a)

Income		*Expenses*	
Babysitting	$40.00	Cell phone	$40.00
Babysitting	$40.00	Entertainment	$105.00
Paycheque	$375.00	Food	$195.00
Paycheque	$375.00	Loan payment	$65.00
Tutoring	$50.00	Rent	$425.00
Tutoring	$100.00	Renter's insurance	$25.00
Tutoring	$50.00	Transportation	$80.00

b) Total income: $1030.00;
total expenses: $935.00

c) $1140.00

d) 9%

7.2 THE BUDGETING PROCESS

BUILD YOUR SKILLS, P. 345

1. a) Answers will vary. A possible budget:

CRAIG AND STÉFANIE'S MONTHLY BUDGET			
Income		*Expenses*	
Craig's monthly pay	$2800.00	Mortgage Payment	$1850.00
Stéfanie's monthly pay	$2770.00	Utilities	$175.00
		Cat care	$50.00
		Clothing	$150.00
		Food	$400.00
		Gas	$150.00
		Car insurance	$112.00
		Gifts	$150.00
		Entertainment	$120.00
		Loan payment	$150.00
		Home insurance	$122.00
		Trip fund	$250.00
		Cell phones	$135.00
		Miscellaneous	$475.00
		Savings	$1281.00
Total income	$5570.00	*Total expenses*	$5570.00

b) Answers will vary depending on the budget you create. For the values given above, they would save $15 372.00.

2. a) Answers will vary. A possible budget:

MINH'S MONTHLY BUDGET			
Income		*Expenses*	
Regular	$1665.00	Rent	$640.00
Tips	$300.00	Utilities, phone, cable, internet	$115.00
		Food	$300.00
		Transportation	$110.00
		Entertainment	$210.00
		Other	$500.00
		Savings	$90.00
Total income	$1965.00	*Total expenses*	$1965.00

b) Answers will vary. Based on this budget, he will be $519.99 short.

3. a) Answers will vary. A possible budget:

GEORGINA'S MONTHLY BUDGET			
Income		*Expenses*	
Monthly pay	$3050.00	Mortgage payment	$1025.00
		Car insurance	$122.00
		House repairs	$70.00
		House taxes	$350.00
		Gifts	$45.00
		Charity	$30.00
		Gas	$125.00
		Loan payment	$220.00
		Miscellaneous	$160.00
		Entertainment	$160.00
		Home insurance	$125.00
		Clothing	$130.00
		Car maintenance	$50.00
		Food	$375.00
		Skiing season's pass	$55.00
		Savings	$8.00
Total income	$3050.00	*Total expenses*	$3050.00

b) Answers will vary. Based on this budget, $96.00.

c) Answers will vary. Based on this budget, 3%.

d) Answers will vary.

4. a) $486.00 b) 12.3%

5. a) $324.00 b) 5 months

6. 7 months

PRACTISE YOUR NEW SKILLS, P. 351

1. a) Answers will vary. A possible budget:

PIERRE'S MONTHLY BUDGET			
Income		*Expenses*	
Semi-monthly pay	$1475.00	Mortgage Payment	$1450.00
Semi-monthly pay	$1475.00	Utilities/phone	$150.00
		Groceries	$325.00
		Loan repayment	$250.00
		Charity	$40.00
		Entertainment	$150.00
		Clothing	$150.00
		Transportation	$220.00
		Miscellaneous	$80.00
		Savings	$135.00
Total income	$2950.00	*Total expenses*	$2950.00

b) $135.00/month; $1620.00/year

2. a) Answers will vary. A possible budget:

CHANTAL'S MONTHLY BUDGET			
Income		*Expenses*	
Semi-monthly pay	$1110.00	Rent	$675.00
Semi-monthly pay	$1,10.00	Utilities, phone, cable, internet	$150.00
Tips	$135.00	Food	$400.00
		Transportation	$300.00
		Entertainment	$150.00
		Other	$375.00
		Savings	$305.00
Total income	$2355.00	*Total expenses*	$2355.00

b) Answers will vary. Based on this budget, 13%.

c) Answers will vary. Based on this budget, 4 months.

3. a) $860.50 b) 9 months

7.3 ANALYZING A BUDGET

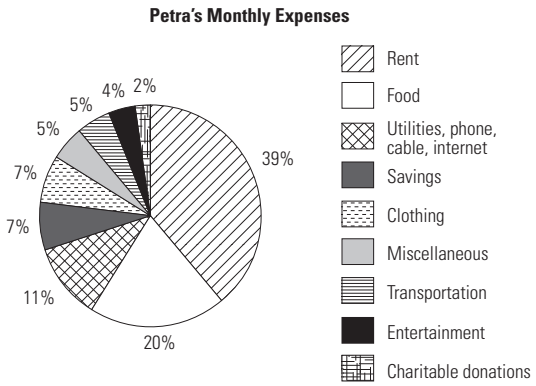
BUILD YOUR SKILLS, P. 355

1. a) 14 months b) 17.5%

2. a) $183.33 b) $2291.67

3. a) Answers will vary.

b) Answers will vary. A possible graph:

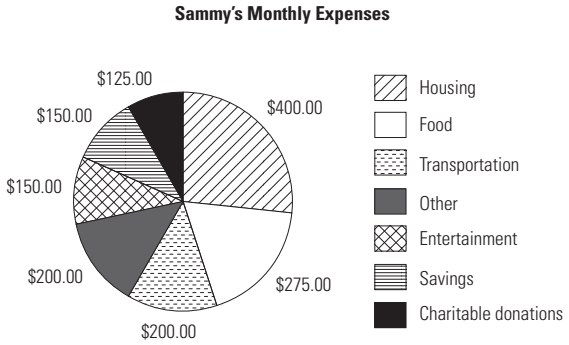


4. a) Sammy needs to lower his spending on transportation, entertainment, and other expenses. He needs to increase his savings and charitable donations.

   b) $600.00

   c) Answers will vary. A possible budget:

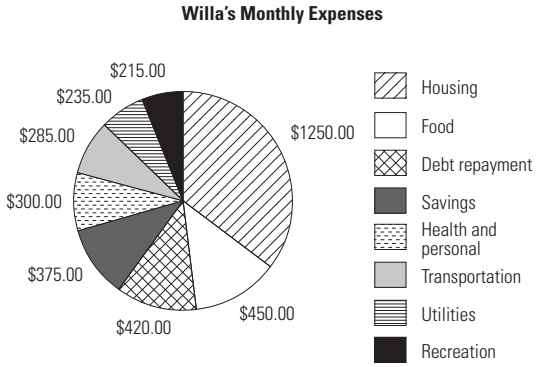
SAMMY'S MONTHLY BUDGET			
Income		*Expenses*	
Pay	$1500.00	Housing	$400.00
		Food	$275.00
		Transportation	$200.00
		Entertainment	$150.00
		Charitable donations	$125.00
		Savings	$150.00
		Other	$200.00
Total income	$1500.00	*Total expenses*	$1500.00



5. a) Answers will vary. A possible budget:

WILLA'S MONTHLY BUDGET			
Income		*Expenses*	
Regular	$3530.00	Housing	$1250.00
		Utilities	$235.00
		Transportation	$285.00
		Debt repayment	$420.00
		Savings	$375.00
		Food	$450.00
		Recreation	$215.00
		Health and personal	$300.00
Total income	$3530.00	*Total expenses*	$3530.00

b)



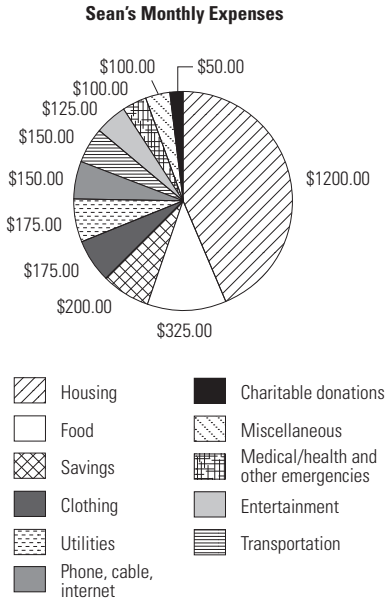
PRACTISE YOUR NEW SKILLS, P. 363

1. a) $4004.00 b) $4204.20

2. a) $4500.00 b) $45 000.00

3. a) Total income = $2750.00; total expenses = $2750.00. Yes, his budget is balanced.

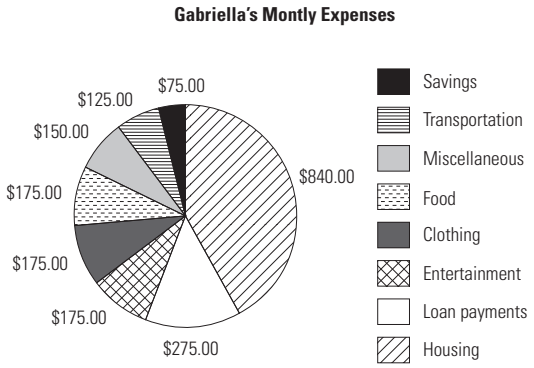
   b)



   c) No, Sean is spending 44% of his income on housing. He should be spending no more than $962.50.

   d) Answers will vary.

4. a)



b) She is spending too much on housing by about $145.00, and on personal expenses (clothing and miscellaneous) by about $30.00.

She is spending about $35.00 less than the guidelines on transportation. Her debt repayment is too low by about $40.00, and savings are too low by about $125.00.

c) Current rate: 14 months.

If she wanted to save $1000.00 in 6 months, she would need to save $91.67 more per month. Her savings would still be lower than the guidelines suggest.

CHAPTER TEST, P. 367

1.

Item	*Income*	*Expense*
Biweekly paycheque: $735.00	Regular	
Monthly bus pass: $75.00		Recurring
Gas: $42.95		Variable
Cell phone bill: $39.96		Recurring
New jacket: $69.95		Variable
Tips: $52.00	Variable	
Debt repayment: $75.00		Recurring
Emergency vet bill for cat: $250.00		Unexpected
Movie ticket and snack: $20.00		Variable
Dinner at restaurant: $27.00		Variable
Charitable donation: $25.00		Variable
Commission: $100.00	Variable	

2. a) Answers will vary. A possible budget:

TAMARA'S MONTHLY BUDGET			
Income		*Expenses*	
Semi-monthly	$975.00	Rent	$575.00
Semi-monthly	$975.00	Utilities, phone, cable, internet	$155.00
		Groceries	$275.00
		Debt repayment	$100.00
		Transportation	$325.00
		Personal	$465.00
		Savings	$55.00
Total income	$1950.00	*Total expenses*	$1950.00

b) Answers will vary. Based on this budget, $660.00/year.

c) Answers will vary. Based on this budget, 3%.

3. a) $4182.75 b) 25.8%

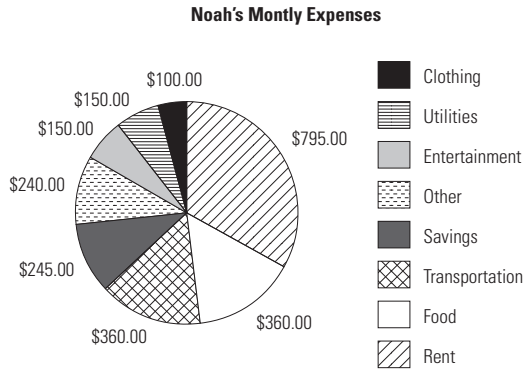
4. a)

MADELEINE'S MONTLY INCOME & EXPENSES			
Income		*Expenses*	
Semi-monthly	$885.00	Rent	$595.00
Semi-monthly	$885.00	Utilities, phone, cable, and internet	$275.00
Tips	$250.00	Food	$295.00
		Transportation	$100.00
		Entertainment	$225.00
		Other	$350.00
		Savings	$180.00
Total income	$2020.00	*Total expenses*	$2020.00

b) Rent: 29.5%; Utilities, phone, cable, and internet: 13.6%; Food: 14.6%; Transportation: 5.0%; Entertainment: 11.1%; Other: 17.3%; Savings: 8.9%

c) $188.77

5. a) Noah would need to spend $140.00 less on food, $15.00 less on transportation, $60.00 less on other expenses, and save $90.00 more per month.

   b) He should put at least $120.00 into savings per month.

NOAH'S MONTHLY BUDGET			
Income		*Expenses*	
Semi-monthly	$1200.00	Rent	$795.00
Semi-monthly	$1200.00	Utilities	$150.00
		Food	$360.00
		Transportation	$360.00
		Entertainment	$150.00
		Clothing	$100.00
		Savings	$245.00
		Other	$240.00
Total income	$2400.00	*Total expenses*	$2400.00